FORGES
BLOWERS
DRILLS

NOV 1 1913

PRICE
LIST
No. 10

Brown-Wales Co.

CANEDY-OTTO M'F'G CO.
CHICAGO HEIGHTS, ILL.

Brown-Wales Co.

CHAS. H. THOMAS, President WM. ELLIOTT, Vice-President
J. E. THOMAS, Secretary and Treasurer

DESCRIPTIVE PRICE LIST

No. 10

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For Repair Lists of above, see back of book.

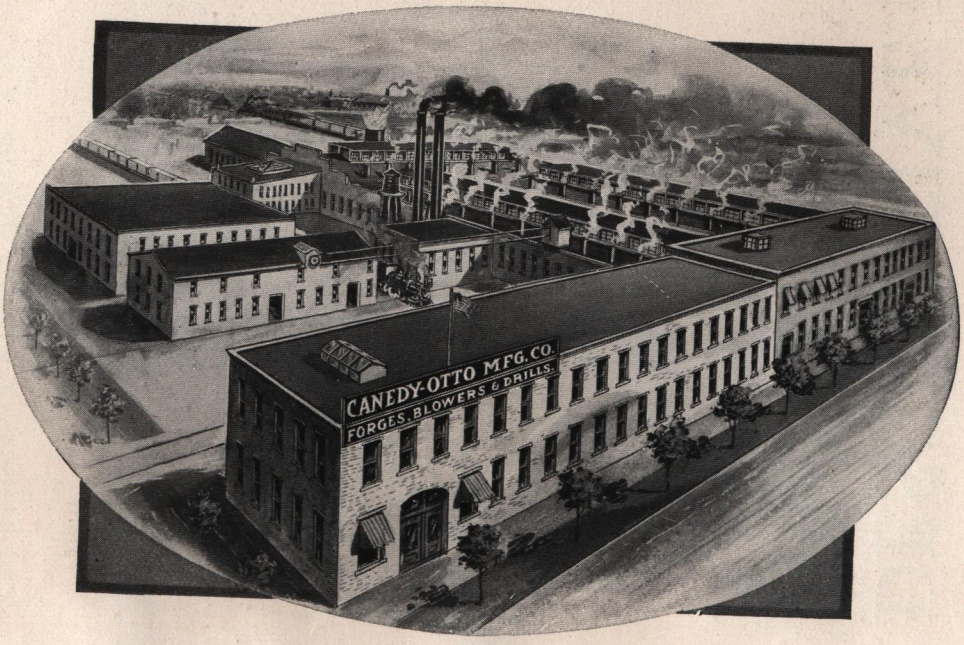
MADE BY

CANEDY-OTTO MFG. CO.

CHICAGO HEIGHTS, ILL.

2-17-11 THE HENRY O. SHEPARD CO., PRINTERS, CHICAGO.

WHERE IT IS ALL MADE



FACTORIES

CANEDY-OTTO MFG. CO., Chicago Heights, Ill.

"A Truth will stand repeating."

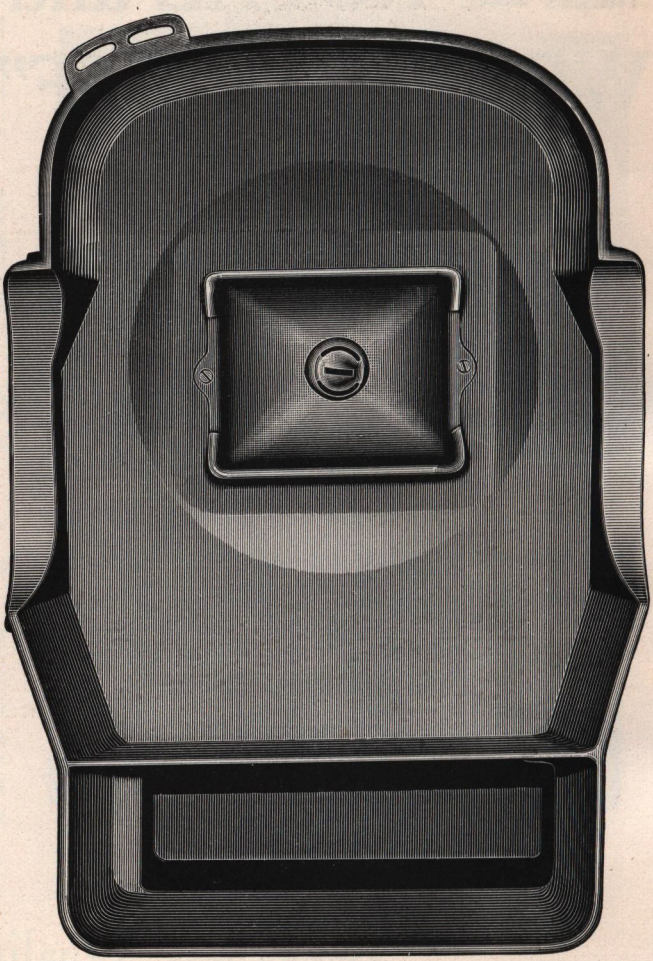
The Names — "ROYAL and WESTERN CHIEF"

When found on a Forge, Blower, Drill, or other Blacksmith Tool—mean that that article is better than the ordinary. They mean that in its construction the best materials and the highest skill obtainable have been employed. They mean that years of experience have served to perfect it. They mean the tool is a success, and quality alone has made it so. Dealers and Blacksmiths in general will procure what they like best. We must deserve before we can obtain trade. There is no doubt about our deserving, because our production grows rapidly.

There is a reason—Quality

THE HEARTH of Royal and Western Chief Forges 1, 99, 100, 200, AA and Electric

Showing Solid Heavy Fire-pot, Side and Center Blast Tuyere Ball. All separate from Hearth. No Clay necessary : : :



NO OTHER FORGE IS BUILT LIKE THIS

Brown-Wales Co.

ROYAL (Steel) FORGES

Pages 5 to 21

(Repair List in Back of Book)

Forges under this name have STEEL Hearths, with Royal Blower Attachment — Crank Movement only.

Royal (Steel) Forge No. 10

For Large Blacksmith, Wagon, Plow and Railroad Shops. Heavy and Light Work.

Blower, 12 inches.
Hearth, 30 x 40 inches.
Height, 30 inches.
Length over all, 48 inches.

Crank Turns Forward or Backward.
Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. For transportation it can be easily and quickly taken apart, and all parts packed in its own Hearth, which forms a strong shipping case.

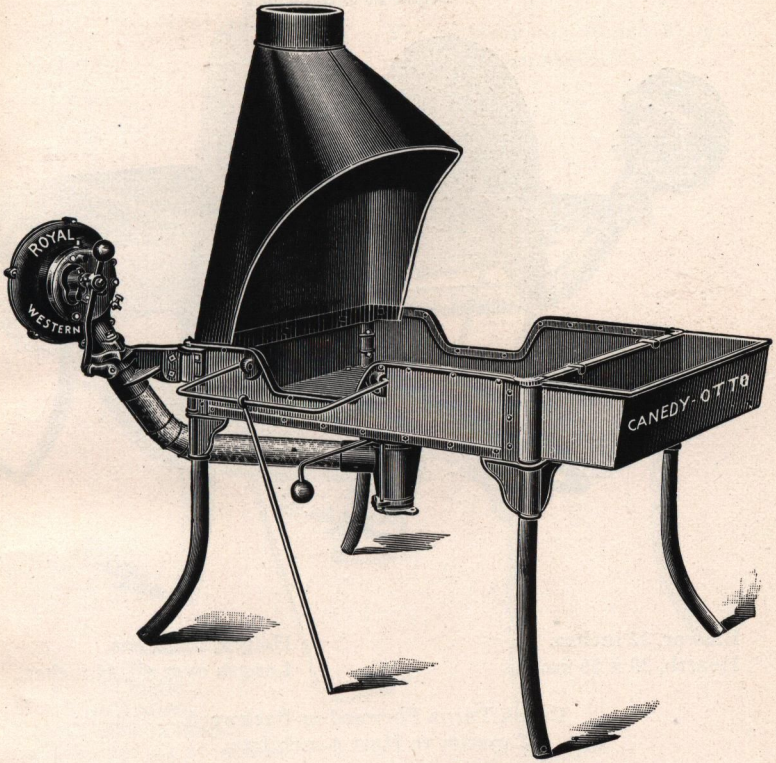
PRICE { **Without Tank, weight 225 lbs. . . . $70.00**
With Tank (as illustrated), wt. 255 lbs. 75.00

(Always shipped WITHOUT TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 15

For Blacksmith, Wagon and Plow Shops, Etc.
Heavy and Light Work.



Blower, 12 inches.
Hearth, 30 x 40 inches.

Height, 30 inches.
Length over all, 48 inches.

Crank Turns Forward or Backward.
Capacity to Heat 4-inch Iron.

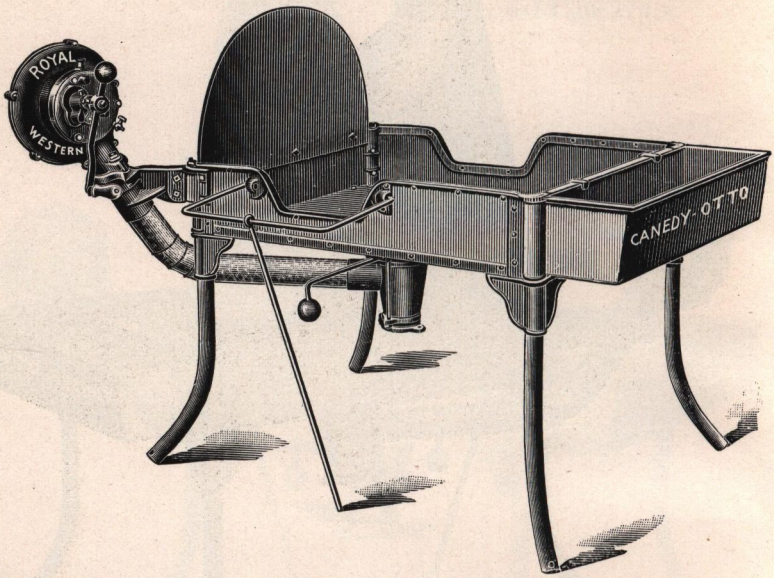
In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast.

PRICE { **Without Tank, weight 215 lbs. . . . $65.00**
With Tank (as illustrated), wt. 245 lbs. 70.00

(Always shipped WITHOUT TANK, unless so ordered.)
FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 20

For Outdoor Construction and Contract Work.
Light or Heavy.



Blower, 12 inches.
Hearth, 30 x 36 inches.

Height, 30 inches.
Length over all, 44 inches.

Crank Turns Forward or Backward.
Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. For transportation it can be easily and quickly taken apart, and all parts packed in its own Hearth, which forms a strong shipping case.

PRICE { **Without Tank, weight 190 lbs. . . . $58.00**
With Tank (as illustrated), wt. 220 lbs. 63.00

(Always shipped WITHOUT TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 30

For Horseshoers, Repair Shops,
Boilermakers, Etc.

Blower, 12 inches.
Height, 30 inches.
Hearth, 30 x 36 inches.
Length over all, 44 inches.

Crank Turns Forward or Backward.
Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. For transportation it can be easily and quickly taken apart, and all parts packed in its own Hearth, which forms a strong shipping case.

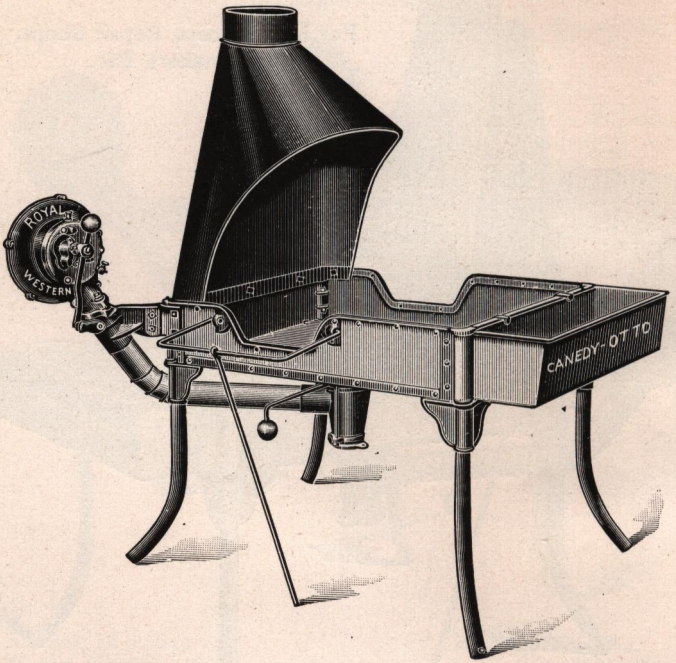
PRICE { **Without Tank, weight 200 lbs. . . . $65.00**
With Tank (as illustrated), wt. 230 lbs. 70.00

(Always shipped WITHOUT TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 35

For Horseshoers, Boilermakers, Repair Shops, Etc.



Blower, 12 inches.
Hearth, 30 x 36 inches.

Height, 30 inches.
Length over all, 44 inches.

Crank Turns Forward or Backward.
Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower, with Steel Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast.

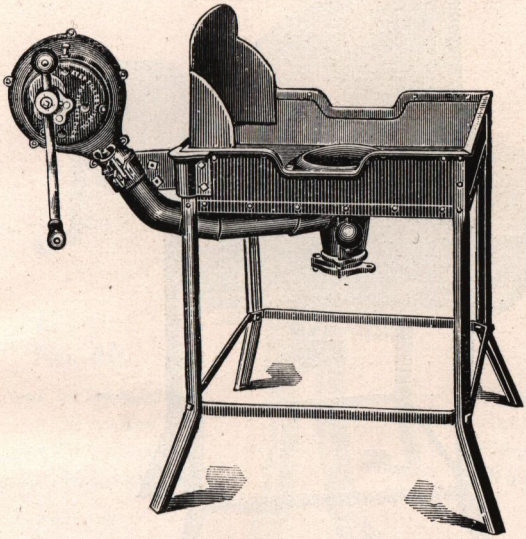
PRICE { **Without Tank, weight 195 lbs. . . . $60.00**
With Tank (as illustrated), wt. 225 lbs. 65.00

(Always shipped WITHOUT TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 36

For Boilermakers, Outdoor Construction Work, Etc.



Blower, 10 inches. Hearth, 24 x 24 inches. Height, 30 inches.

Weight, 135 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

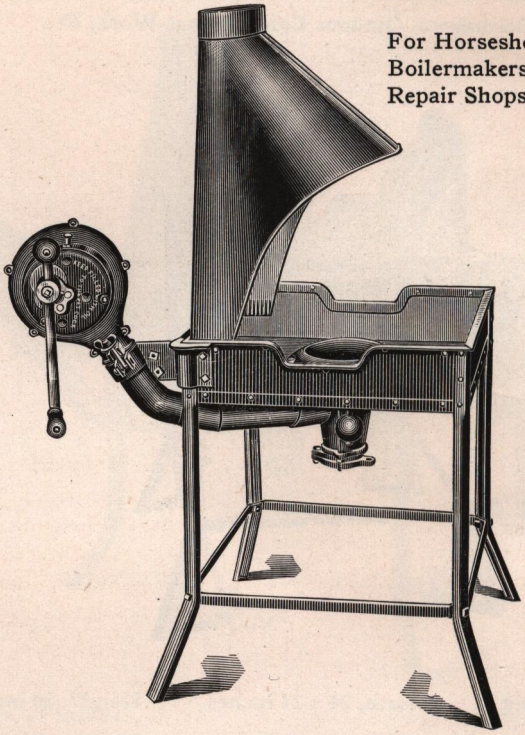
This Forge has a Duck Nest Fire-pot with side and center blast Tuyere Ball. The legs are of Steel, U-shaped, riveted to the hearth and strongly braced at the bottom.

The Blower can be instantly removed for transportation.

PRICE $40.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 37



For Horseshoers,
Boilermakers,
Repair Shops, Etc.

Blower, 10 inches. **Hearth, 24 x 24 inches.** **Height, 30 inches.**
Weight, 140 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

This Forge has a Duck Nest Fire-pot with side and center blast Tuyere Ball. The legs are of Steel, U-shaped, riveted to the hearth and strongly braced at the bottom.

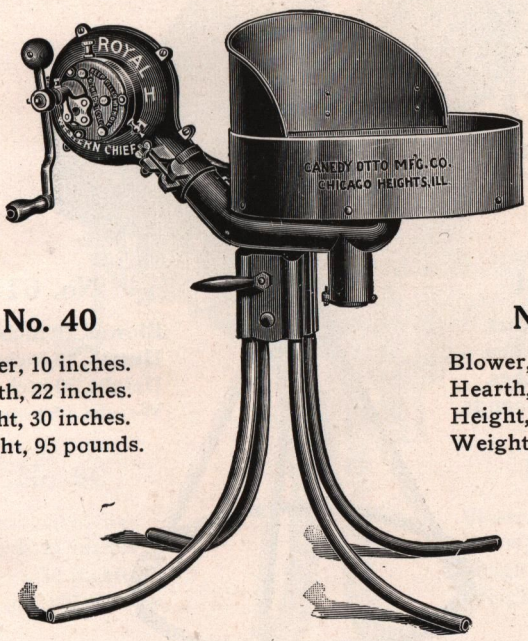
The Blower can be instantly removed for transportation.

PRICE $44.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forges Nos. 40 and 60

For Boilermakers, Rivet Work, Mines, Quarries, Armies, Navies, Etc.



No. 40

Blower, 10 inches.
Hearth, 22 inches.
Height, 30 inches.
Weight, 95 pounds.

No. 60

Blower, 10 inches.
Hearth, 18 inches.
Height, 30 inches.
Weight, 90 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

The Forges are high-grade and first-class, and can be quickly knocked down and packed in a box 22 x 24 x 9 inches. The best Army and Navy Forge made.

PRICE { **No. 40** **$40.00**
No. 60 . . . . . **35.00**

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forges Nos. 41 and 61

For Elevated Railway, Buildings, High-up Construction and Trestle Work, Etc.

No. 41

Blower, 10 inches.
Hearth, 22 inches.
Height, 30 inches.
Weight, 100 pounds.

No. 61

Blower, 10 inches.
Hearth, 18 inches.
Height, 30 inches.
Weight, 95 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

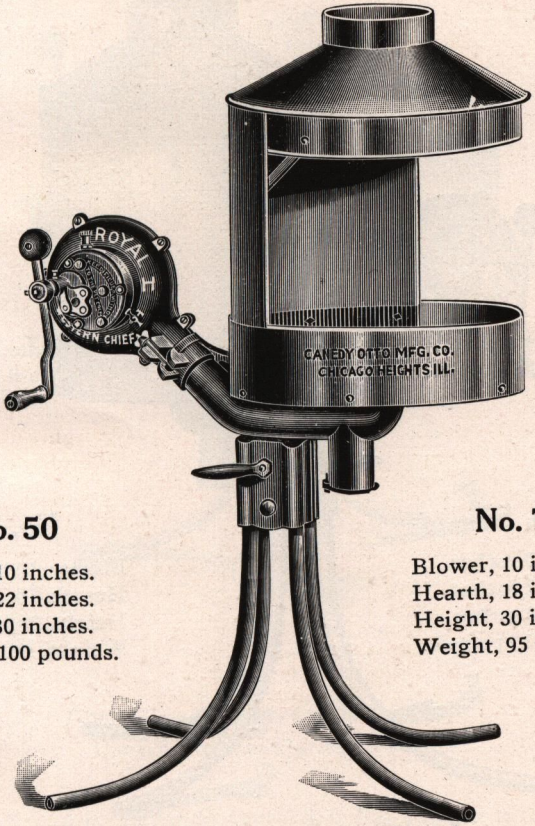
The Ring Base on these Forges permits their use on bridges and high-up places, where it is difficult to place a Forge that has legs only. They are easily and quickly taken apart for shipping or transportation.

PRICE { **No. 41** **$43.00**
No. 61 . . . . . **38.00**

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forges Nos. 50 and 70

For Toolmakers, Tin Shops, Jewelers, Dentists, Small Repair Shops.
INDOOR WORK.



No. 50

Blower, 10 inches.
Hearth, 22 inches.
Height, 30 inches.
Weight, 100 pounds.

No. 70

Blower, 10 inches.
Hearth, 18 inches.
Height, 30 inches.
Weight, 95 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

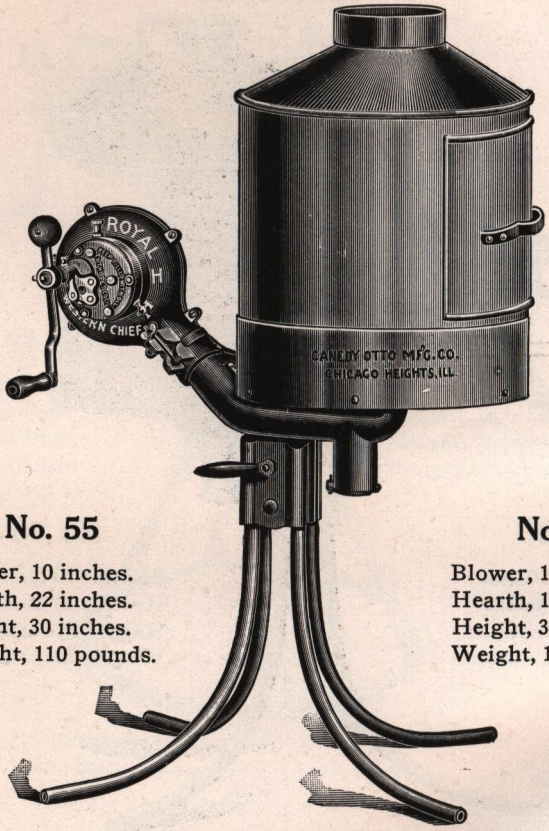
Can be quickly taken apart for shipping or transportation.

PRICE { **No. 50** **$43.00**
{ **No. 70** **38.00**

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forges Nos. 55 and 75

For Sawmills, Furniture Factories, Oil Refineries, Wood Shops, Etc.



No. 55

Blower, 10 inches.
Hearth, 22 inches.
Height, 30 inches.
Weight, 110 pounds.

No. 75

Blower, 10 inches.
Hearth, 18 inches.
Height, 30 inches.
Weight, 100 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

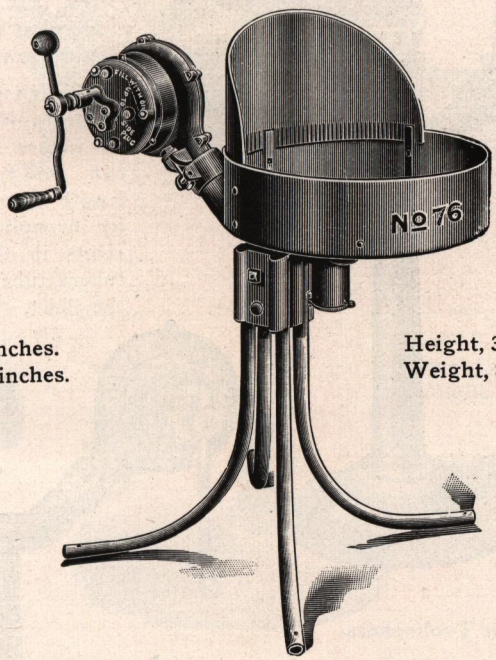
This Forge is arranged for places where it is objectionable and dangerous to have smoke, gas or sparks escape.

PRICE { **No. 55** **$45.00**
No. 75 . . . . . **40.00**

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 76

For Riveters, Boilermakers, Mines, Quarries, Etc.



Blower, 9 inches.
Hearth, 18 inches.

Height, 30 inches.
Weight, 85 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

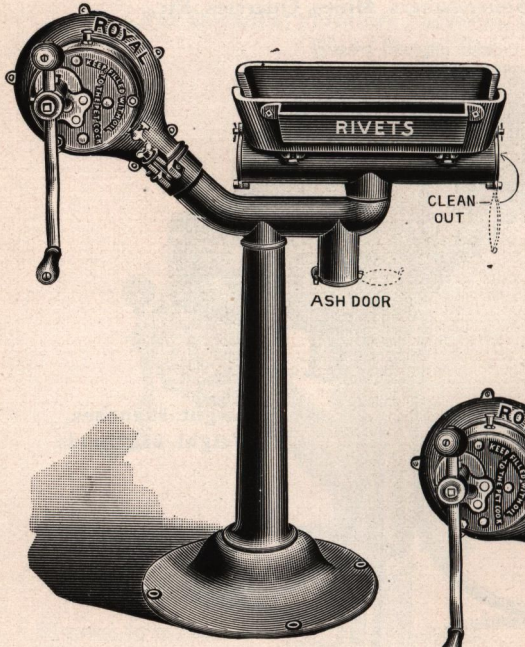
Forge No. 76 is similar in appearance but cheaper in construction than our regular Royal Forges of like type.

PRICE $30.00

FOR LIST OF REPAIRS, SEE PAGE 124.

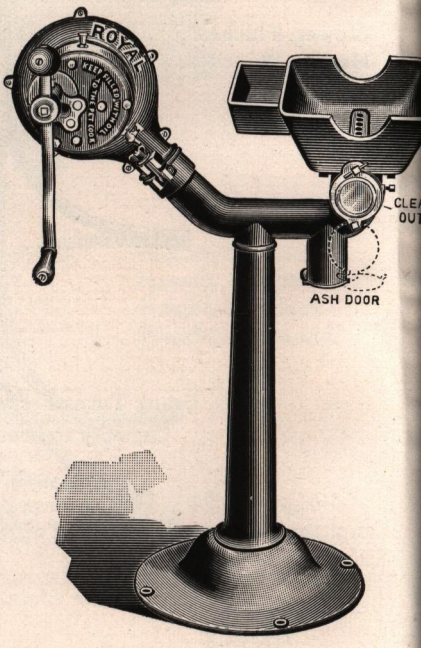
Royal Forge No. 83

Hearth can be set at ANY Angle desired.



For Riveters, Boilermakers, Bridge Builders, Etc. Also for Heating Wagon Tires and Plowshares.

This view shows the proper position. A fire 16 inches long, or it can be reduced any length down to 2 inches by dropping plugs or rivets in the holes of tuyere tube to shut off the blast.



For Toolmakers

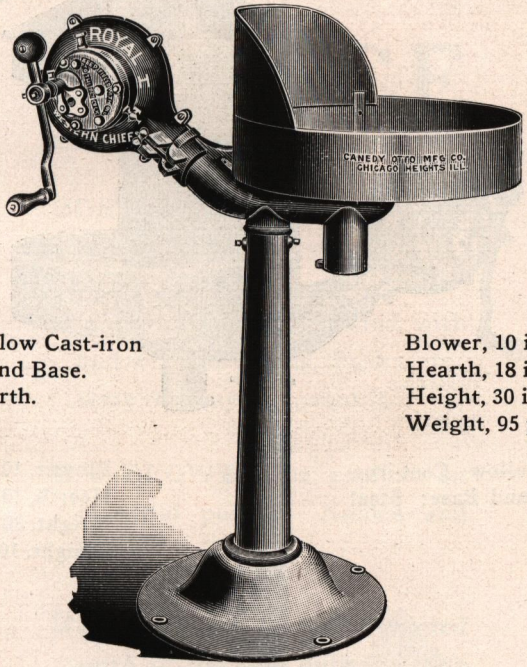
This position is proper. An ideal forge for hardening and tempering long reamers, stay-bolt taps and special tools.

Blower, 10 inches.
Height, 30 inches.
Hearth, 17 x 10¼ x 4 inches inside.
Weight, 125 pounds.

PRICE $35.00

Royal (Steel) Forge No. 80

For Bridgebuilders, Contractors, Rivet Work, Etc.



With Hollow Cast-iron
Column and Base.
Steel Hearth.

Blower, 10 inches.
Hearth, 18 inches.
Height, 30 inches.
Weight, 95 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

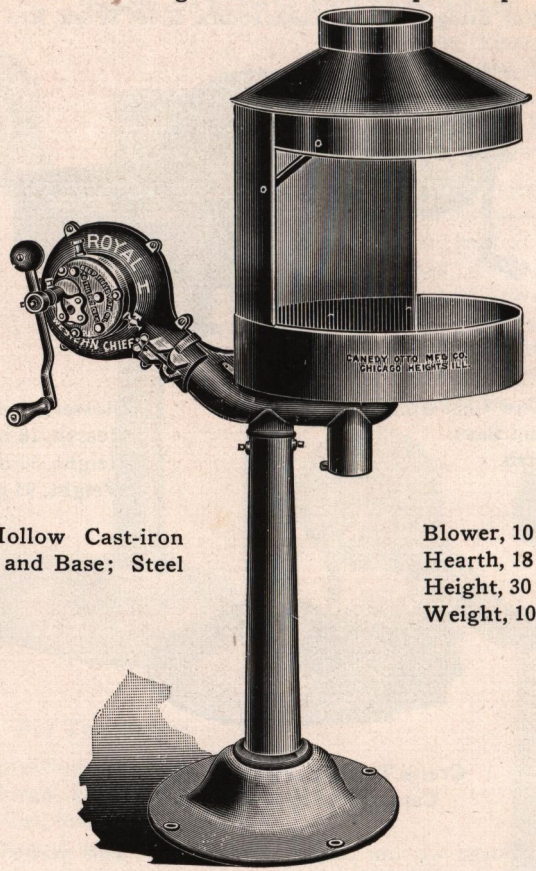
In this Forge we aim to please customers who prefer Stand to Legs. It can be quickly taken apart for transportation. It is especially adapted to Miners, Bridgebuilders, Contractors, Railroad and Trestle Work, the Round Base giving it a solid foundation in high-up places. Hearth and Blower part can be detached from Stand and operated inside of Boilers and low-down places.

PRICE $35.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Steel) Forge No. 81

For the Garage and Automobile Repair Shop.



With Hollow Cast-iron Column and Base; Steel Hearth.

Blower, 10 inches.
Hearth, 18 inches.
Height, 30 inches.
Weight, 100 pounds.

Crank Turns Forward or Backward.
Capacity to heat 3½-inch Iron.

This Forge, while suitable for all indoor use, is designed especially for the Garage and Automobile repair shop. The neatest and best forge for this purpose upon the market.

PRICE $38.00

Can be furnished with a full enclosed hood, if desired; then known as No. 82, Price, **$40.00.**

FOR LIST OF REPAIRS, SEE PAGE 124.

NOTICE

DON'T leave us to guess at what is wanted on your orders.

If a FORGE, that is listed with and without Hoods, Tanks, etc., state the way you want it.

If a BLOWER, be explicit on essential points: Names and Sizes.

If a DRILL, state whether wanted ***with*** or ***without*** pulleys; also whether CHUCK shall be with ½-inch or 41/64-inch hole.

A little care in these matters will save delays, errors, disappointments.

ROYAL
(Western Chief)
FORGES

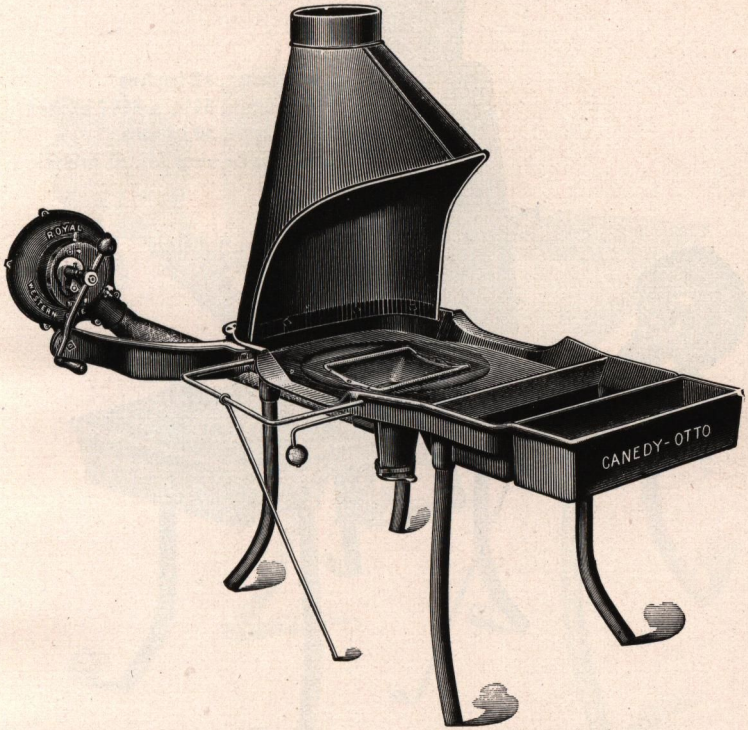
Pages 22 to 35

(Repair List in Back of Book)

Forges under this name have CAST-IRON Hearths, with Royal Blower Attachment — Crank Movement only.

Royal (WESTERN CHIEF) Forge No. 100

For Use of Large Blacksmith, Wagon, Plow, Railroad Shops, Etc., Where Heavy Work is Done, and a First-class Forge and Fire are Needed.



Blower, 12 inches.
Hearth, 31½ x 45½ inches.

Height, 30 inches.
Length over all, 53 inches.

Crank Turns Forward or Backward.
Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower with Western Chief Standard Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. **We guarantee it fully.**

For detailed description of Hearth, see page 4.

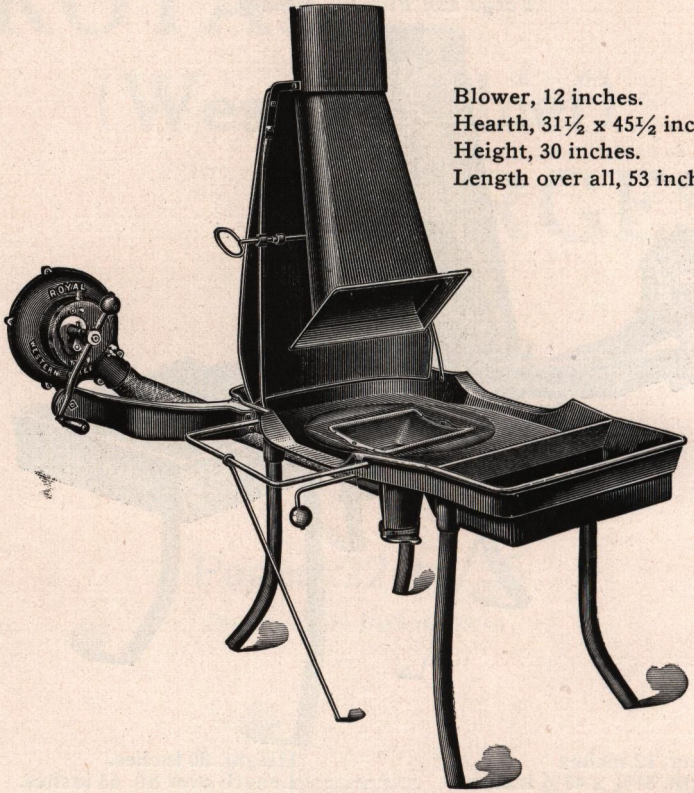
PRICE { **With one Tank, weight 295 lbs. . . $50.00**
With EXTRA Tank (as illustrated), wt. 325 lbs. 55.00

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 200

With Improved Smoke Conveyor, Royal Blower and Western Chief Standard Hearth.



Blower, 12 inches.
Hearth, 31½ x 45½ inches.
Height, 30 inches.
Length over all, 53 inches.

Crank Turns Forward or Backward.
Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower with Western Chief Standard Hearth, having Solid Fire-pot with Tuyere Ball furnishing side and center blast. **We guarantee it fully.**

For detailed description of Hearth, see page 4.

PRICE { **With one Tank, weight 300 lbs. . . $55.00**
With EXTRA Tank (as illustrated), wt. 330 lbs. 60.00

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 102

For Well-drillers, Railroads, Boilermakers, Quarries, Contractors, Outdoor Work, Etc.

Blower, 10 inches.
Hearth, 23 x 34 inches.

Height, 30 inches.
Weight, 180 pounds.

Crank Turns Forward or Backward.
Capacity to Heat 3½-inch Iron.

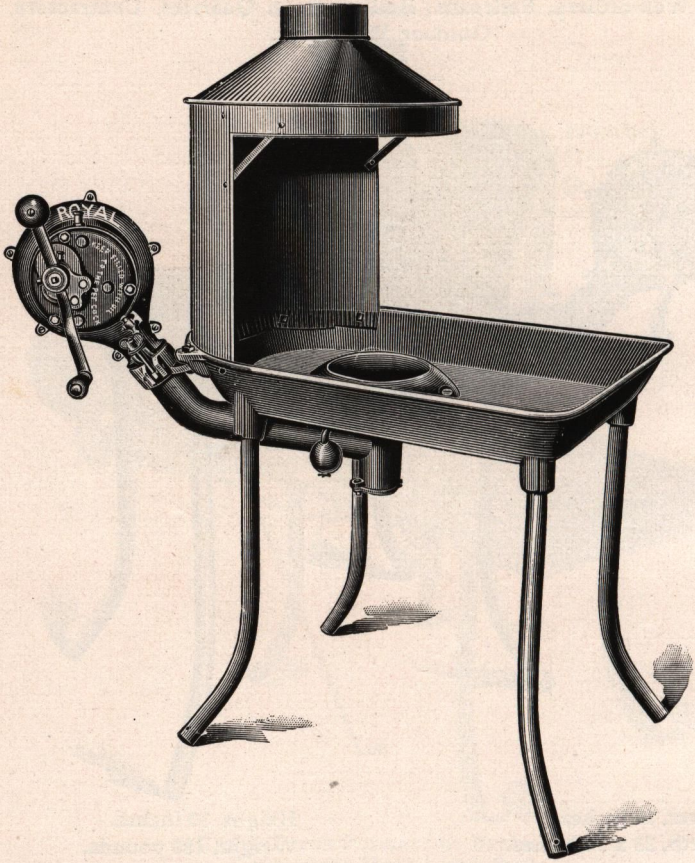
The very best and highest grade throughout. The "Royal" type of Blower and Duck Nest Fire-pot.

PRICE $38.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 103

For Horseshoers, Small Blacksmith Shops, Boilermakers, Etc.



Blower, 10 inches.
Hearth, 23 x 34 inches.

Height, 30 inches.
Weight, 185 pounds.

Crank Turns Forward or Backward.
Capacity to Heat 3½-inch Iron.

The very best and highest grade throughout. The "Royal" type of Blower and Duck Nest Fire-pot.

PRICE $42.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 104

Excellent for Mines, Quarries, Bridgebuilders, Railroad and Outdoor Repair or Construction Work.

Blower, 10 inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 120 pounds.

Crank Turns Forward or Backward.
Capacity to Heat 3½-inch Iron.

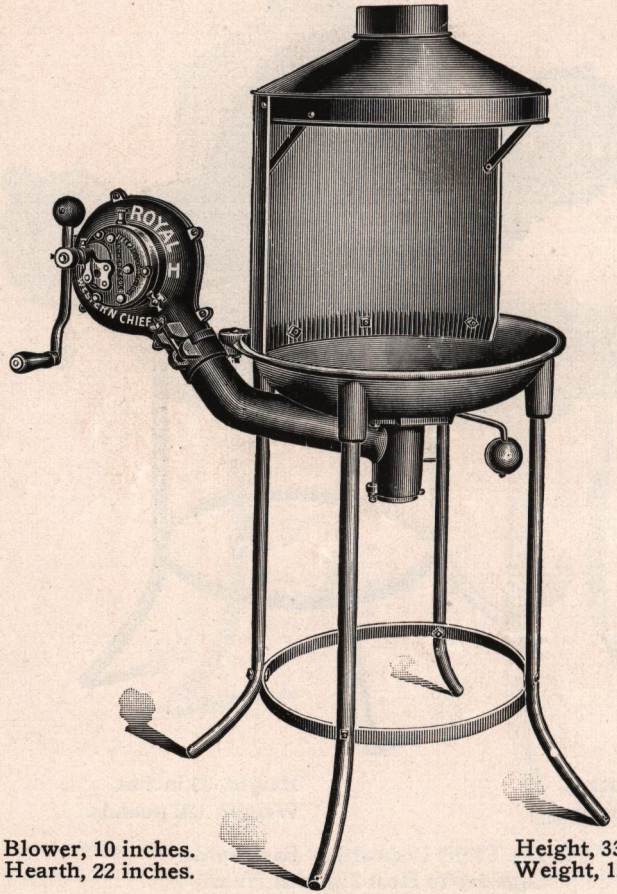
The very best and highest grade throughout. The "Royal" type of Blower with Cast-iron Hearth — will outwear Steel Hearth. The most serviceable forge constructed for outdoor use.

PRICE $33.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 105

For Toolmakers, Jewelers, Dentists, Tin Shops, Repair Shops, Etc.



Blower, 10 inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 125 pounds.

Crank Turns Forward or Backward.
Capacity to Heat 3½-inch Iron.

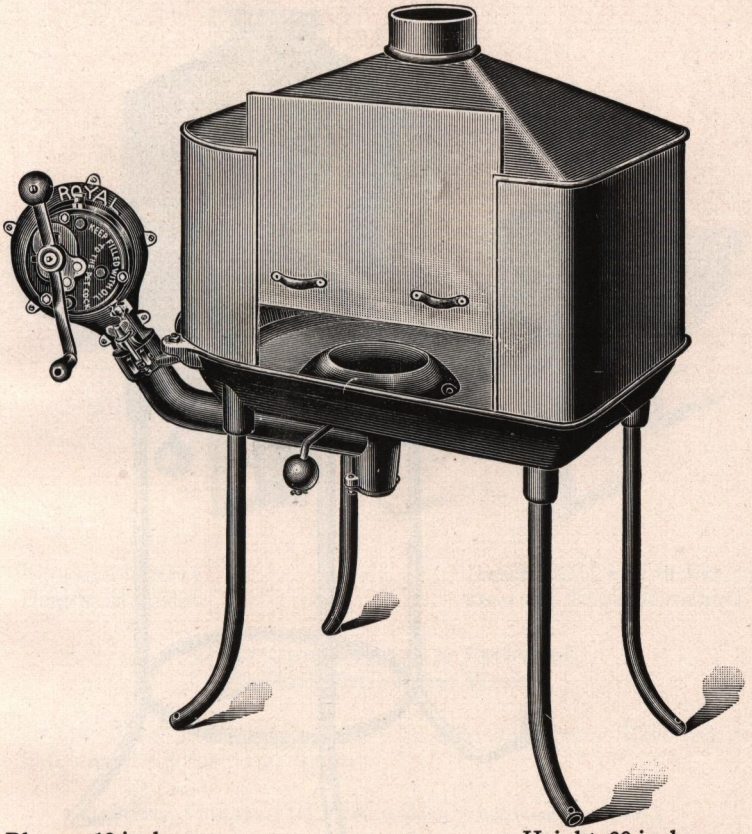
The very best and highest grade throughout. The "Royal" type of Blower with Cast-iron Hearth — will outwear Steel Hearth.

PRICE $36.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 103¼

Made Especially for Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Etc., where Sparks, Escaping Gas, Etc., are Objectionable.



Blower, 10 inches.
Hearth, 23 x 34 inches.

Height, 30 inches.
Weight, 200 pounds.

Crank Turns Forward or Backward.
Capacity to Heat 3½-inch Iron.

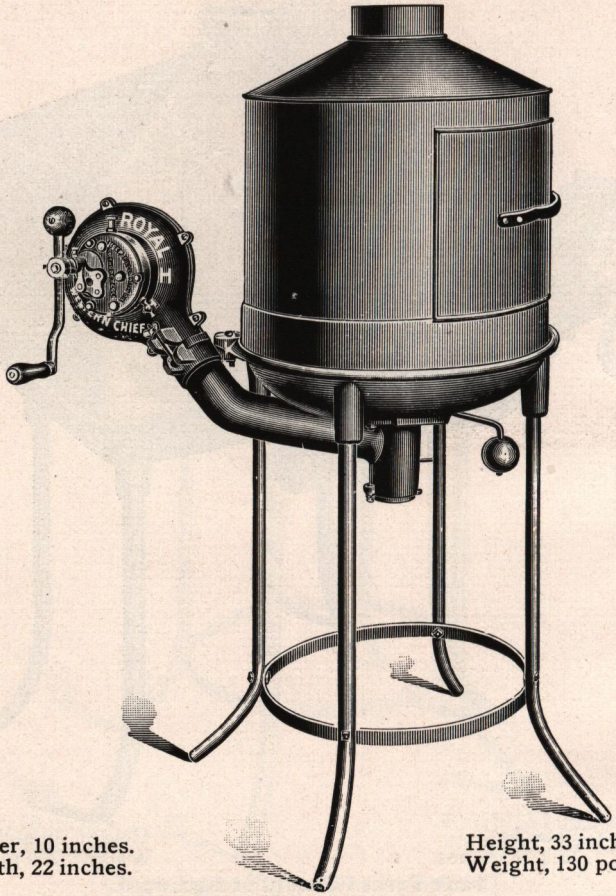
The very best and highest grade throughout. The "Royal" type of Blower and Duck Nest Fire-pot, also Hood having doors, front and back.

PRICE $45.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 105½

For Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Dentists, Etc., where Sparks, Escaping Gas, Etc., are Objectionable.



Blower, 10 inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 130 pounds.

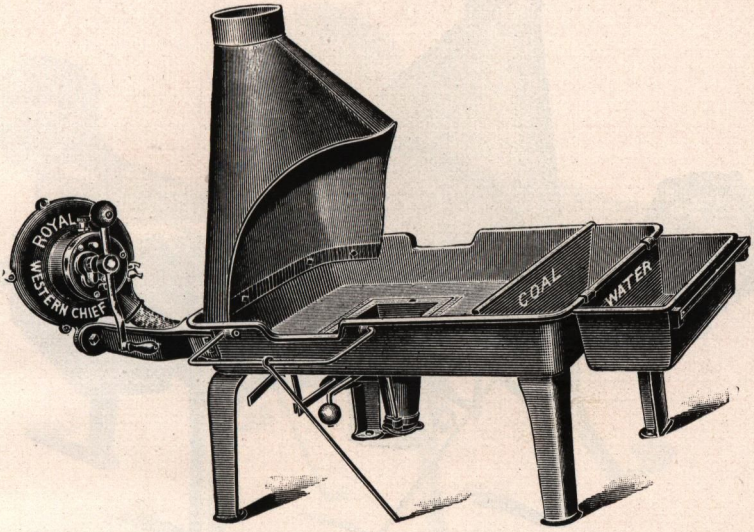
Crank Turns Forward or Backward.
Capacity to Heat 3½-inch Iron.
The very best and highest grade throughout. The "Royal" type of Blower with Cast-iron Hearth — will outwear Steel Hearth.

PRICE $38.50

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 8

For Large, Heavy Blacksmith, Plow and Agricultural Shops.



Blower, 12 inches.
Height, 26 inches.

Hearth, 37½ x 41 inches.
Over all, 37½ x 51 inches.

Crank Turns Forward or Backward.
Capacity for Largest Work.

This Forge has solid Fire-pot with Side and Center Blast Tuyere Ball, also Tool Rest and Racks.

(Always shipped PLAIN, unless otherwise ordered.)

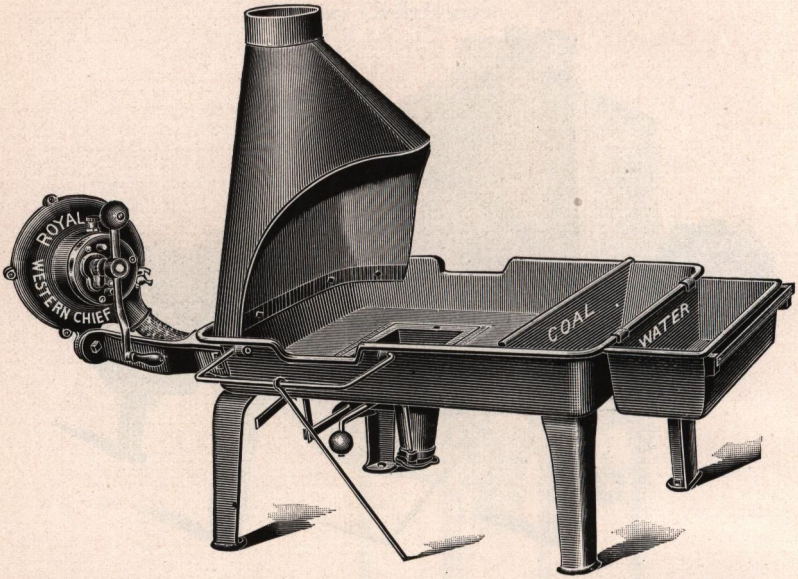
PRICE	**Plain, no Tank, no Hood, weight 435 lbs.**	**$65.00**
	With Tank, no Hood, weight 500 lbs.	**70.00**
	With Hood, no Tank, weight 450 lbs.	**70.00**
	With Tank and Hood (as illustrated), weight 515 lbs.	**75.00**

When specially requested, will furnish Round Canopy Hood at same price as Half-hood.

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 9

For Large, Heavy Blacksmith, Plow and Agricultural Shops.



Blower, 12 inches.
Height, 26 inches.

Hearth, 38 x 50 inches.
Over all, 38 x 60 inches.

Crank Turns Forward or Backward.
Capacity for Largest Work.

This Forge has solid Fire-pot with Side and Center Blast Tuyere Ball, also Tool Rest and Racks.

(Always shipped PLAIN, unless otherwise ordered.)

PRICE	**Plain, no Tank, no Hood, weight 500 lbs.**	**$70.00**
	With Tank, no Hood, weight 565 lbs.	**75.00**
	With Hood, no Tank, weight 515 lbs.	**75.00**
	With Tank and Hood (as illustrated), weight 580 lbs.	**80.00**

When specially requested, will furnish Round Canopy Hood at same price as Half-hood.

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (WESTERN CHIEF) Forge No. 99

For Large, Heavy Construction and Contractors' Work.

Outdoor use.

Blower, 12 inches. Height, 30 inches. Length over all, 53 inches.
Hearth, 31½ x 45½ inches.

Crank Turns Forward or Backward.

Capacity to Heat 4-inch Iron.

In this Forge we combine our "Royal" style of Blower with the Western Chief Standard Hearth, having solid Fire-pot with Tuyere Ball furnishing side and center blast. **We guarantee it fully.**

For detailed description of Hearth, see page 4.

PRICE { **With one Tank, weight 290 lbs. . . $46.00**
With EXTRA Tank (as illustrated), wt. 320 lbs. 51.00

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (ELECTRIC DRIVEN) Forge No. 301

For Use of Large Blacksmith, Wagon, Plow, Railroad Shops, Etc., Where Heavy Work Is Done and a First-class Forge and Fire Are Needed.

Blower, 10 inches.
Hearth, 31½ x 45½ inches.

Height, 30 inches.
Length over all, 53 inches.

Capacity to Heat 4-inch Iron.

In this Forge we combine our **110 or 220 volt Dustproof Type of Motor,** as shown and described on page 91, with Western Chief Standard Hearth having solid Firepot with Tuyere Ball, furnishing side and center blast. We guarantee it fully.

For detailed description of Hearth, see page 4.

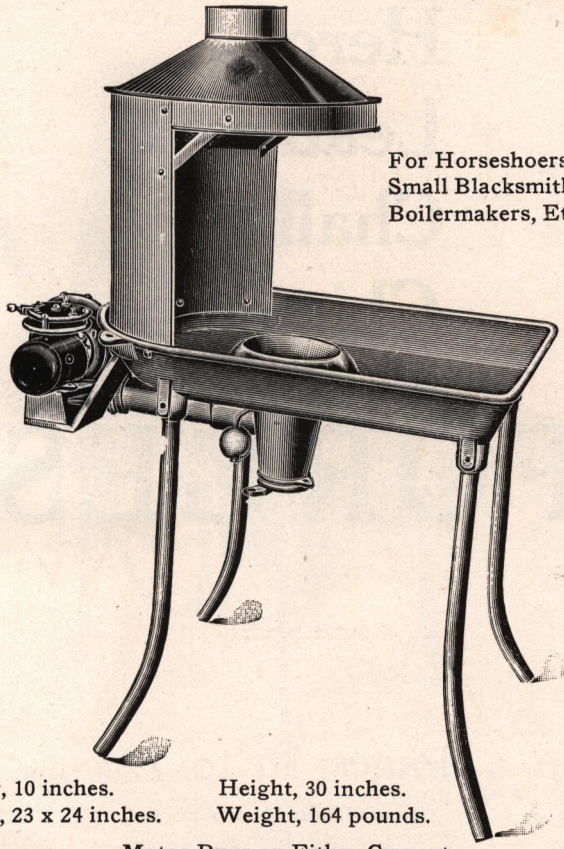
When ordering Electric-driven Forges or Blowers, furnish us with the following information:

1. Whether current is **alternating** or **direct.**
2. If alternating current, find out cycles or alternations, and state whether 110 or 220 volts.
3. Our standard motors are designed for 60 cycles, or 7,200 alternations.
4. If direct current, the voltage is all the information needed.

PRICE { **With one Tank (as illustrated), wt. 267 lbs. . $78.50**
With EXTRA Tank, weight 297 lbs. . 83.50

(Always shipped WITHOUT EXTRA TANK, unless so ordered.)

Royal (ELECTRIC DRIVEN) Forge No. 303



For Horseshoers,
Small Blacksmith Shops,
Boilermakers, Etc.

Blower, 10 inches. **Height, 30 inches.**
Hearth, 23 x 24 inches. **Weight, 164 pounds.**

Motor Runs on Either Current.
Capacity to Heat 3½-inch Iron.

The very best and highest grade throughout. Equipped with 110 or 220 volt **Dustproof Motor,** as shown and described on page 91.

Has Duck Nest Fire-pot.

When ordering Electric-driven Forges or Blowers, furnish us with the following information:

1. Whether current is **alternating** or **direct.**
2. If alternating current, find out cycles or alternations, and state whether 110 or 220 volts.
3. Our standard motors are designed for 60 cycles, or 7,200 alternations.
4. If direct current, the voltage is all the information needed.

PRICE $73.00

Western Chief
Hero
Leader
Challenge
and Chicago
FORGES

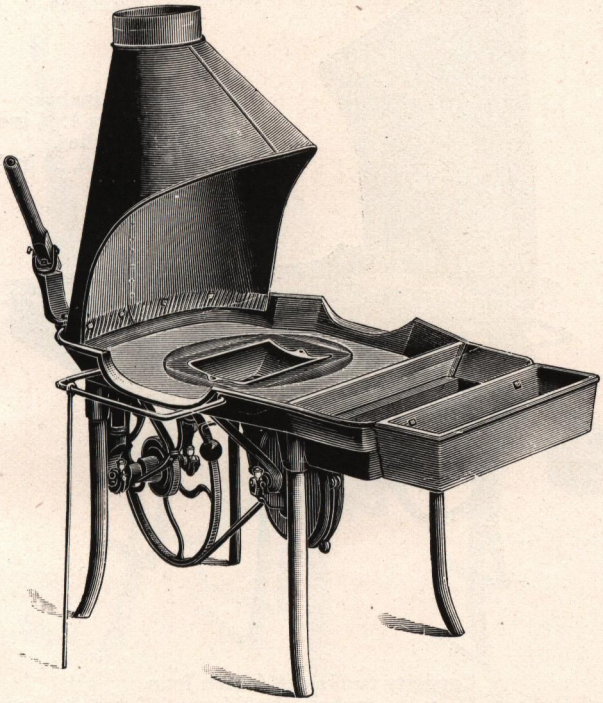
Pages 36 to 72

(Repair List in Back of Book)

Forges under above names are all with Cast-iron Hearths, and (excepting Stationary and Leader Forges) are operated by lever movement or pulley power or both.

Western Chief Forge No. 1

The Largest Portable Forge Made.



Blower, 14½ inches.
Hearth, 31½ x 45½ inches.

Height, 30 inches.
Length over all, 53 inches.

Capacity to Heat 4½-inch Iron.

This Forge is adapted to the largest, heaviest work. It has a solid Fire-pot with Tuyere Ball, furnishing side and center blast. Is equipped with Brass Boxes and Oil Cups throughout, also Noiseless Adjustable Friction Clutch. This Forge can be furnished reversed, to operate with the **right arm,** for **left-handed** smiths, when desired. For detailed description of Hearth, see page 4.

PRICE { **With one Tank, weight 315 lbs. . . $50.00**
With EXTRA Tank (as illustrated), wt. 345 lbs. 55.00

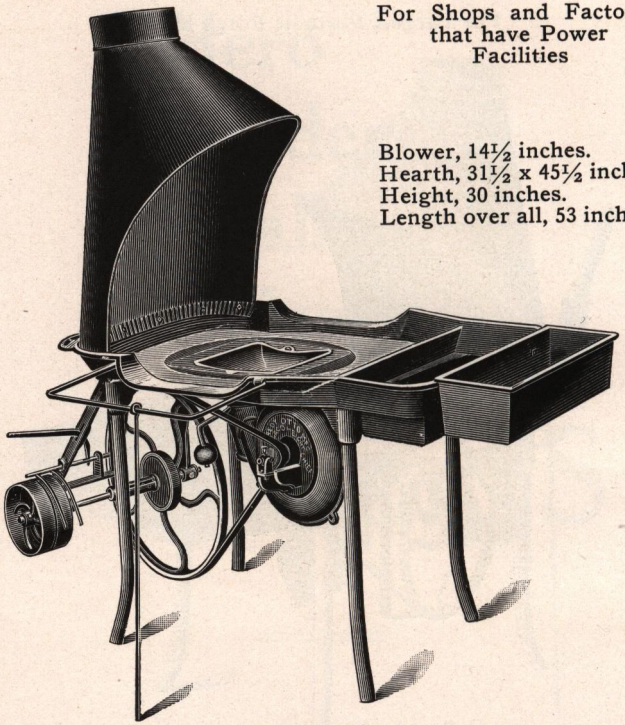
(Always shipped WITHOUT EXTRA TANK, unless so ordered.)

FOR LIST OF REPAIRS, SEE PAGE 126.

Western Chief Forge No. 1½

For Shops and Factories that have Power Facilities

Blower, 14½ inches.
Hearth, 31½ x 45½ inches.
Height, 30 inches.
Length over all, 53 inches.



Capacity to Heat 4½-inch Iron.
Size of Pulleys, 7½ x 1¾ inches, should run 125 revolutions per minute.

This Forge is arranged for power, and adapted to heavy work. It is equipped with Solid Fire-pot with Tuyere Ball furnishing side and center blast. Brass Boxes and Oil Cups throughout. When desired, can be furnished with Hand Power Attachment, a convenience when power is not running. It has Blast Gate to regulate Blast when driven by power. For detailed description of Hearth, see page 4.

PRICE	**With one Tank, weight 315 lbs.**	**$53.00**
	With extra Tank (as illustrated), weight 345 lbs.	**58.00**
	With one Tank and Hand Power, weight 330 lbs.	**57.00**
	With extra Tank, also Hand Power, weight 360 lbs.	**62.00**

(Never shipped WITH EXTRA TANK, nor HAND POWER, unless asked for.)

FOR LIST OF REPAIRS, SEE PAGE 126.

Western Chief Forge No. 2

Suitable for Bridgebuilders, Railroads, Quarries, Welldrivers, Boilermakers, Etc.

Blower, 12 inches.
Hearth, 23 x 34 inches.

Height, 30 inches.
Weight, 195 pounds.

Capacity to Heat 3-inch Iron.

This Forge is equipped with Brass Boxes and Oil Cups throughout, also Noiseless Adjustable Friction Clutch, and has a **Duck Nest Fire-pot.**

PRICE $36.00

FOR LIST OF REPAIRS, SEE PAGE 128.

Western Chief Forge No. 3

Suitable for Boilermakers, Horseshoers, Small Blacksmith Shops, Etc.

Blower, 12 inches.
Hearth, 23 x 34 inches.

Height, 30 inches.
Weight, 200 pounds.

Capacity to Heat 3-inch Iron.

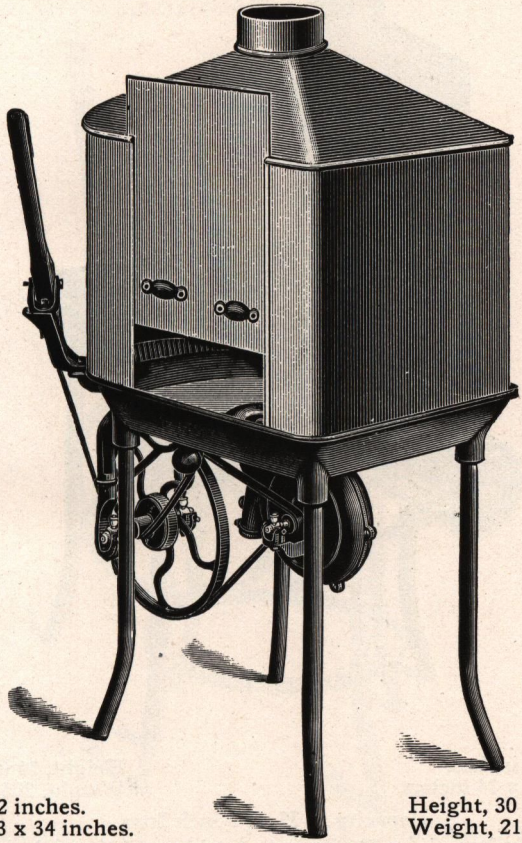
This Forge is equipped with Brass Boxes and Oil Cups throughout, also Noiseless Adjustable Friction Clutch, and has a **Duck Nest Fire-pot.**

PRICE $40.00

FOR LIST OF REPAIRS, SEE PAGE 128.

Western Chief Forge No. 3¼

For Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Etc.



Blower, 12 inches.
Hearth, 23 x 34 inches.

Height, 30 inches.
Weight, 215 pounds.

Capacity to Heat 3-inch Iron.

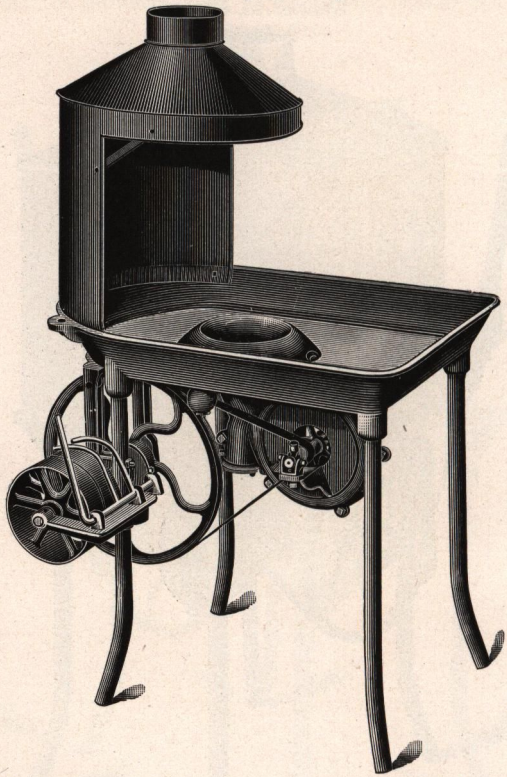
This Forge, having full enclosed Hood, with Doors both front and back, is desirable where it is dangerous or objectionable to have Smoke, Gas or Sparks escape. Is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch, and has **a Duck Nest Fire-pot.**

PRICE	**With Hand Lever (as illustrated)**	**$42.00**
	With Power Attachment only	**47.00**
	With both Hand and Power	**50.00**

FOR LIST OF REPAIRS, SEE PAGE 128.

Western Chief Forge No. 3½

For Small Blacksmith and Repair Shops where Power is Used.



Blower, 12 inches.
Hearth, 23 x 34 inches.

Height, 30 inches.
Weight, 205 pounds.

Capacity to Heat 3-inch Iron.

Sise of Pulleys, 7½ x 1¾ inches, should run 125 revolutions per minute.

Is equipped with Brass Boxes and Oil Cups throughout, and has **a Duck Nest Fire-pot.**

When desired, it can be furnished with Hand-power Attachment, a convenience when power is not running.

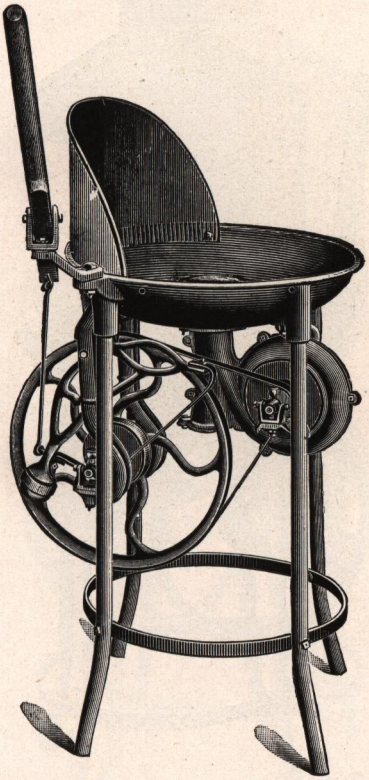
PRICE { **Power Attachment only (as illustrated) . $45.00**
Power Attachment, also Hand Power . 48.00

(Always shipped for POWER ONLY (unless otherwise ordered.)

FOR LIST OF REPAIRS, SEE PAGE 128.

Western Chief Forge No. 4

A splendid Forge for Mines, Quarries, Bridgebuilders, Railroad and Outdoor Repair Work.



Blower, 9 inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 120 pounds.

Capacity to Heat 2½-inch Iron.

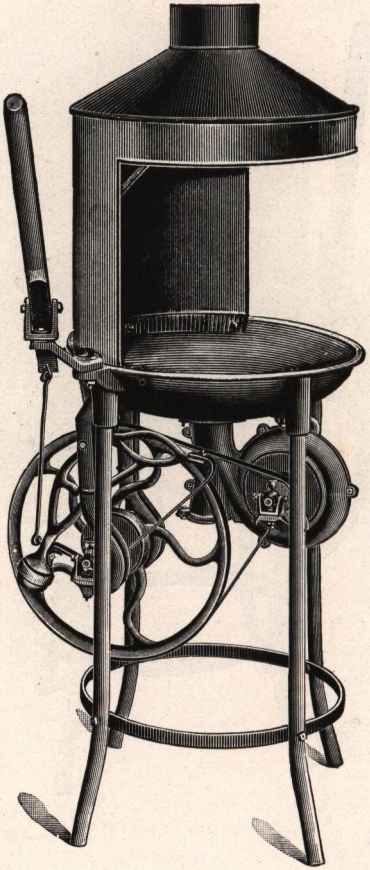
It is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch.

PRICE $24.00

FOR LIST OF REPAIRS, SEE PAGE 130.

Western Chief Forge No. 5

For Toolmakers, Bicycle Repair Shops, Jewelers, Dentists, Tin Shops, Farmers, Etc.



Blower, 9 inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 125 pounds.

Capacity to Heat 2½-inch Iron.

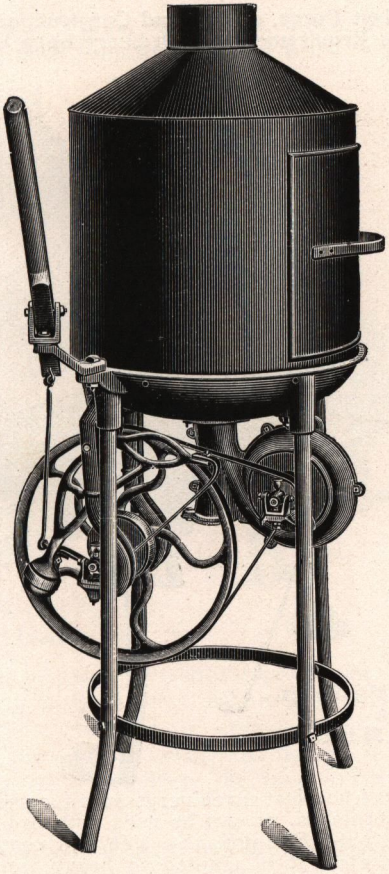
It is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch.

PRICE $27.00

FOR LIST OF REPAIRS, SEE PAGE 130.

Western Chief Forge No. 5½

For Jewelers, Dentists, Furniture Factories, Sawmills, Wood Shops, Oil Refineries, Etc.



Blower, 9 inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 130 pounds.

Capacity to Heat 2½-inch Iron.

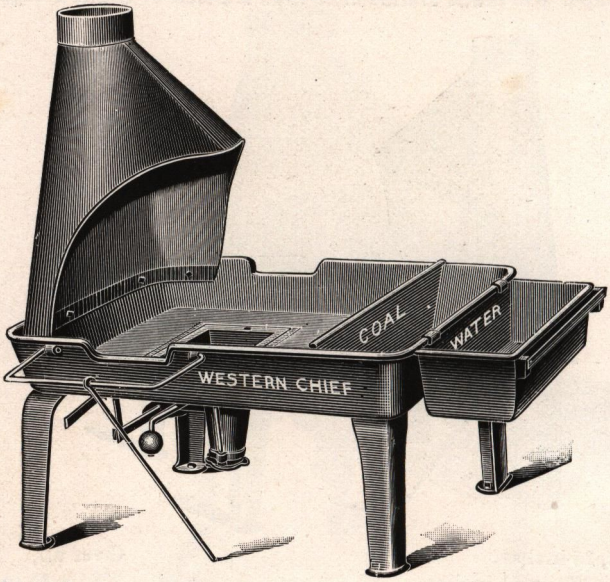
It is equipped throughout with Brass Boxes and Oil Cups, also Noiseless, Adjustable Friction Clutch.

PRICE $29.50

FOR LIST OF REPAIRS, SEE PAGE 130.

Western Chief Forge
Size XBB

A Stationary Blast Forge, very Large, Heavy and Strong. Is Cheaper and much Handsomer than a Brick or Stone Forge.



Height, 26 inches.
Hearth, 38 x 50 inches.

Over all,
38 x 60 inches.

This Forge is intended for shops supplied with power blast, or can be used with ordinary bellows or blower, if desired. Is equipped with Solid Fire-pot, with side and center blast Tuyere Ball. Has Tool Rest and Racks, and Lever Attachment to Blast Gate, by which the smith easily regulates the blast. The most complete Forge of its kind on the market.

(Always shipped PLAIN, unless otherwise ordered.)

PRICE

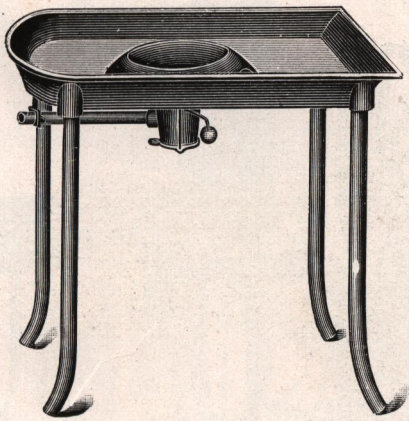
Plain, no Tank, no Hood, weight 440 lbs.	**$40.00**
With Tank, no Hood, weight 505 lbs.	**45.00**
With Hood, no Tank, weight 455 lbs.	**45.00**
With Tank and Hood (as illustrated), weight 520 lbs.	**50.00**

When specially requested, will furnish Round Canopy Hood at same price as Half-hood.

FOR LIST OF REPAIRS, SEE PAGE 132.

Western Chief Forge Size CC

A Small Stationary Blast Forge, Suitable for the Requirements of Ordinary Medium-sized Work.



Hearth, 23 x 34 inches. Height, 30 inches. Weight, 145 pounds.

This Forge has no blast machinery, and is intended for use in shops where power blast is furnished, or can be used with ordinary blower or bellows. It has a blast gate in its pipe connections, also has **Duck Nest Fire-pot,** and is well adapted to all ordinary, medium-sized work.

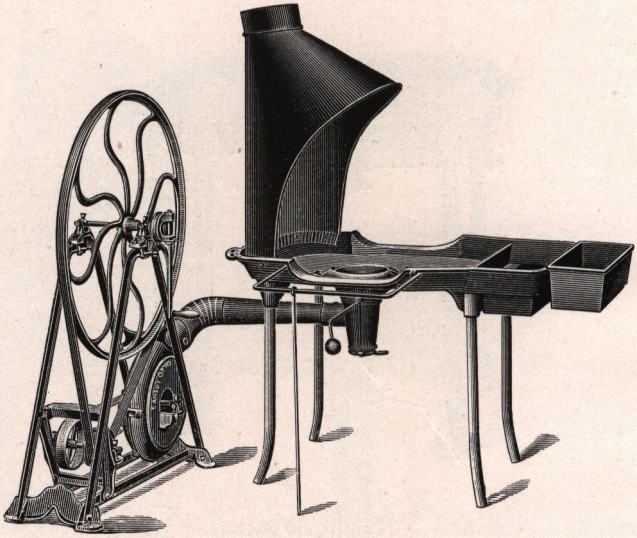
(Always shipped PLAIN, unless otherwise ordered.)

PRICE { **Plain (as illustrated), no Hood . . . $20.00**
With Half-Hood 24.00

FOR LIST OF REPAIRS, SEE PAGE 132.

Western Chief Combined Forge and Blower, Size AG

An Excellent Substitute for the Old-fashioned Brick Forge and Bellows.



DIMENSIONS.

FORGE { Over all, 31½ x 53 ins. / Height, 30 inches. / Weight, 265 pounds. }

BLOWER { Fly-wheel, 36 inches. / Blower, 16½ inches. / Weight, 150 pounds. }

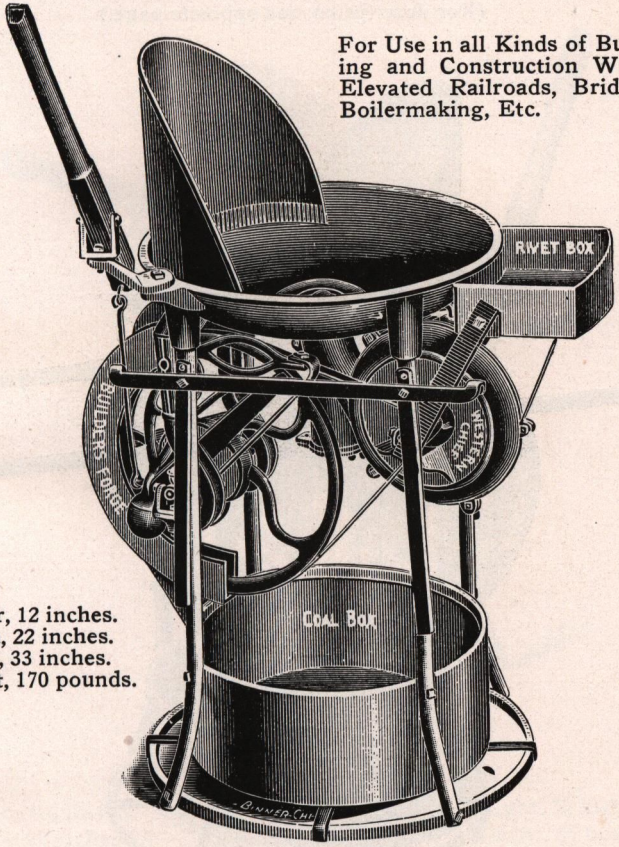
This combination of Forge and Blower is complete in every detail, and much more desirable than a brick forge and bellows. The Blower runs very easily and furnishes a tremendous blast; and, as it sets up close behind the Forge, but very little space is taken. The Forge is equipped with side and center blast Tuyere Ball, and also Solid Fire-pot. Ashes and cinders are easily removed. Everything within easy reach and arranged for the convenience of the smith. For details of Forge Hearth, see page 4.

PRICE	**Complete (as illustrated) . . . . .**	**$70.00**
	Without Hood or without Extra Tank	**65.00**
	Without both Hood or Extra Tank . .	**60.00**

FOR LIST OF REPAIRS, SEE PAGES 126 AND 150.

Western Chief "Contractors and Builders Forge" No. 16

For Use in all Kinds of Building and Construction Work, Elevated Railroads, Bridges, Boilermaking, Etc.



Blower, 12 inches.
Hearth, 22 inches.
Height, 33 inches.
Weight, 170 pounds.

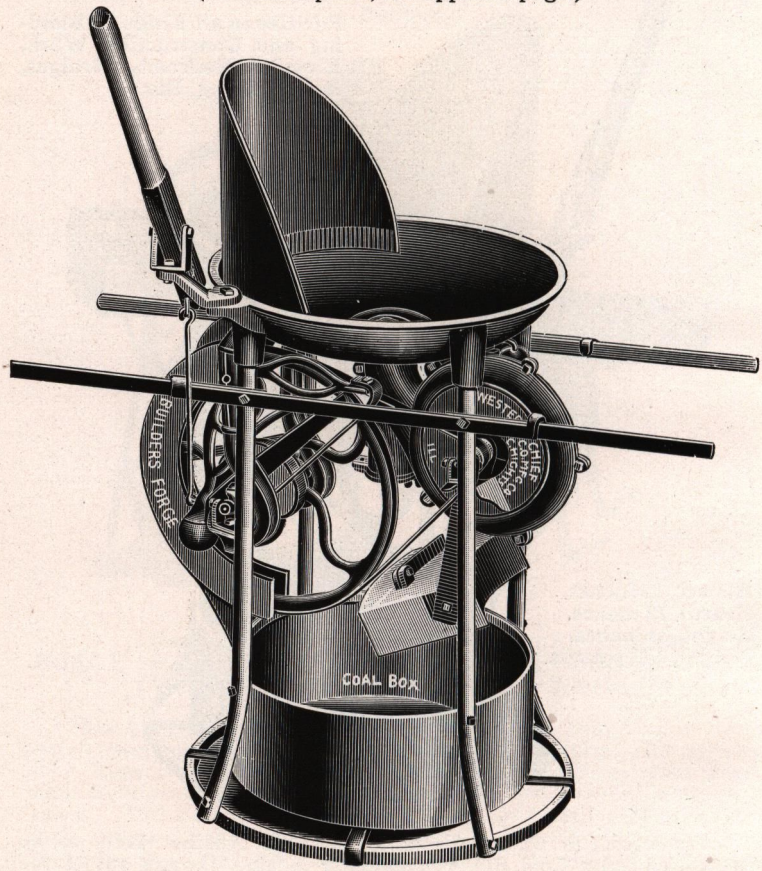
It is equipped with Adjustable Box for holding rivets to be heated, and also Coal Box conveniently located, though out of the way. The Belts are protected against damage from weather by shields which cover them. It has adjustable handles for carrying or moving the Forge from one place to another, which, when Forge is in use, are dropped down and not in the way. Its operation is extremely easy, as it is equipped with Brass Boxes and Oil Cups, and Noiseless, Adjustable Friction Clutch.

PRICE $40.00

FOR LIST OF REPAIRS, SEE PAGE 130.

Western Chief "Contractors and Builders Forge" No. 16

(For description, see opposite page.)



The above cut shows the manner in which our Western Chief "Contractors and Builders Forge" is arranged for moving from one place to another. The Rivet Box is made to swing down underneath the Hearth, if desired, and the handle to raise so that it can be very easily carried. The frequent necessity for moving the position of a forge in building and construction work makes these features most valuable.

Hero Forge No. 6

Suitable for Mines, Quarries, Prospectors, Bridges and Outdoor Work.

Blower, 7½ inches.
Hearth, 18 inches.

Height, 30 inches.
Weight, 90 pounds.

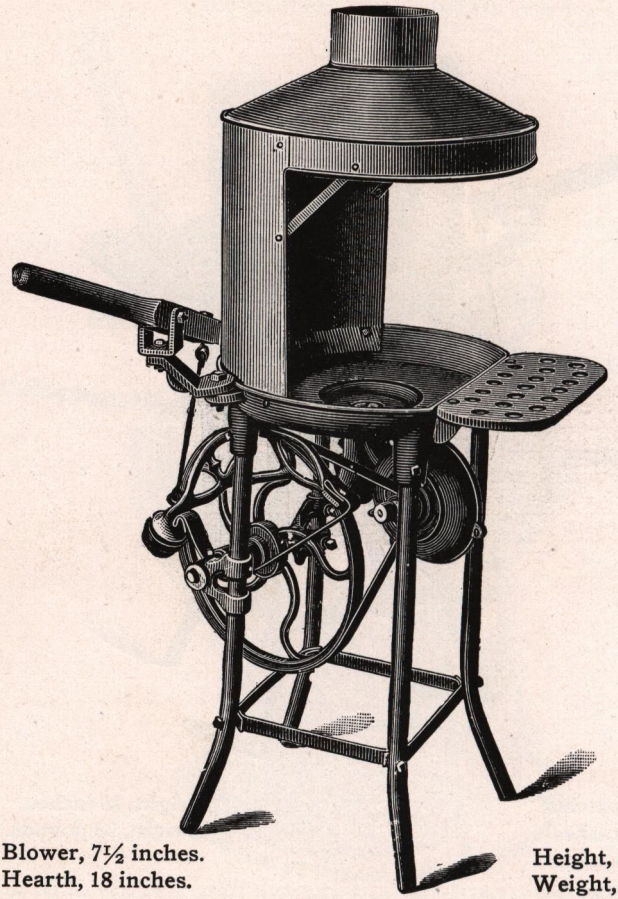
This Forge has capacity to heat 1½-inch iron, also has Shelf as shown, and is equipped with Noiseless, Adjustable Friction Clutch.

PRICE $20.00

FOR LIST OF REPAIRS, SEE PAGE 134.

Hero Forge No. 7

Very Popular with Toolmakers, Tin Shops, Farmers, Jewelers, Small Repair Shops, Etc.



Blower, 7½ inches.
Hearth, 18 inches.

Height, 30 inches.
Weight, 95 pounds.

This Forge has capacity to heat 1½-inch iron, also has Shelf and Hood as shown, and is equipped with Noiseless, Adjustable Friction Clutch.

PRICE $23.00

FOR LIST OF REPAIRS, SEE PAGE 134.

Leader Forge No. 11

Suitable for Light Outdoor Work.

Blower, 7½ inches.
Hearth, 18 inches.

Height, 30 inches.
Weight, 65 pounds.

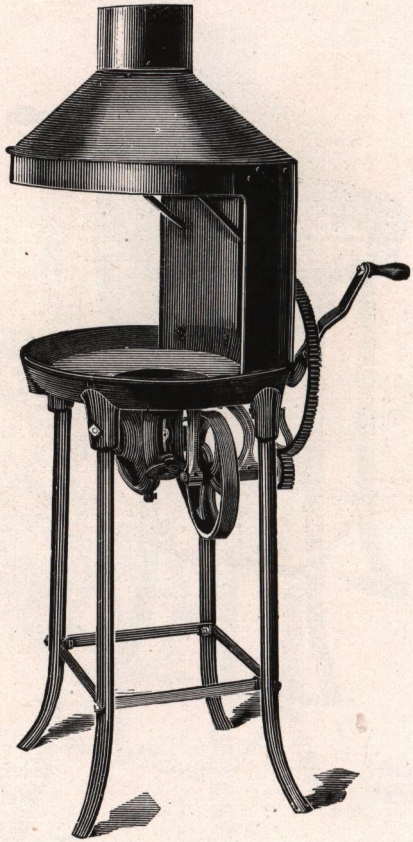
Capacity to Heat 1-inch Iron.

PRICE $14.00

FOR LIST OF REPAIRS, SEE PAGE 134.

Leader Forge No. 12

Suitable for Light Indoor Work.



Blower, 7½ inches.
Hearth, 18 inches.

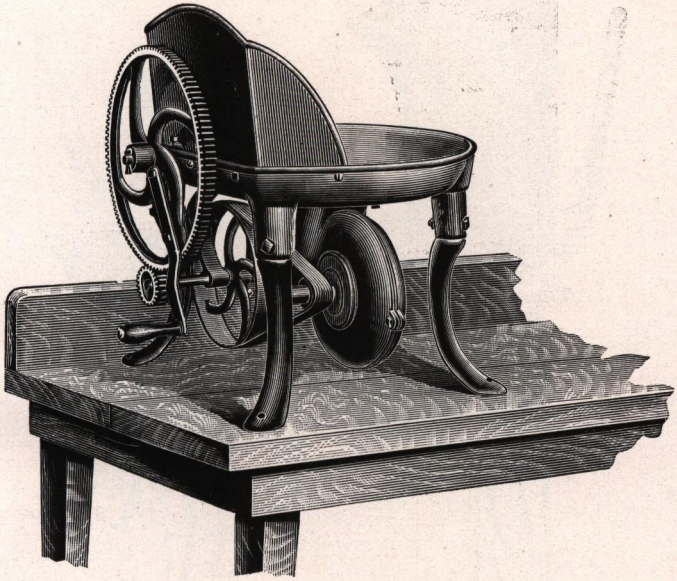
Height, 30 inches.
Weight, 70 pounds.

Capacity to Heat 1-inch Iron.

PRICE $16.00

FOR LIST OF REPAIRS, SEE PAGE 134.

Leader Bench Forges
Nos. 13 and 14



Blower, 7½ inches. Hearth, 18 inches. Height, 12½ inches.

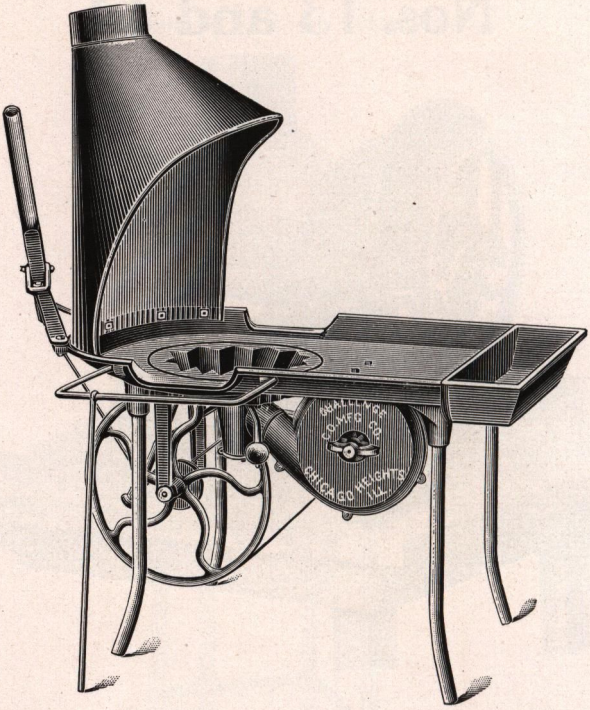
Capacity to Heat 1-inch Iron.

Can be packed in box, 19 x 19 x 14 inches.

PRICE { **No. 13 with Shield, weight 65 lbs. . . $14.00**
No. 14 with Half-hood, weight 70 lbs. 16.00

FOR LIST OF REPAIRS, SEE PAGE 134.

Challenge Forge No. 1c



Blower, 14½ inches.
Hearth, 45 x 31 inches.

Height, 30 inches.
Length over all, 53 inches.

Capacity to Heat 4-inch Iron.

This Forge is constructed for the heaviest kind of work. It has an improved Fire-pot, separate from Hearth, which securely holds clay. The blast is direct from Fan and very powerful, by which, in connection with Side and Center Blast Tuyere Ball, a quick heat with little labor is secured.

PRICE { **Without Tank, weight 275 lbs. . . . $50.00**
With Tank (as illustrated), wt. 300 lbs. 55.00

Power Attachment, **$2.50** net, extra.

(Always shipped WITHOUT TANK, unless specially ordered.)

FOR LIST OF REPAIRS, SEE PAGE 136.

Challenge Forge No. 2c

Suitable for Boilermakers, Bridgebuilders, Railroads, Welldrivers, Outdoor Work.

Blower, 12½ inches.
Hearth, 35 x 23 inches.

Height, 30 inches.
Weight, 180 pounds.

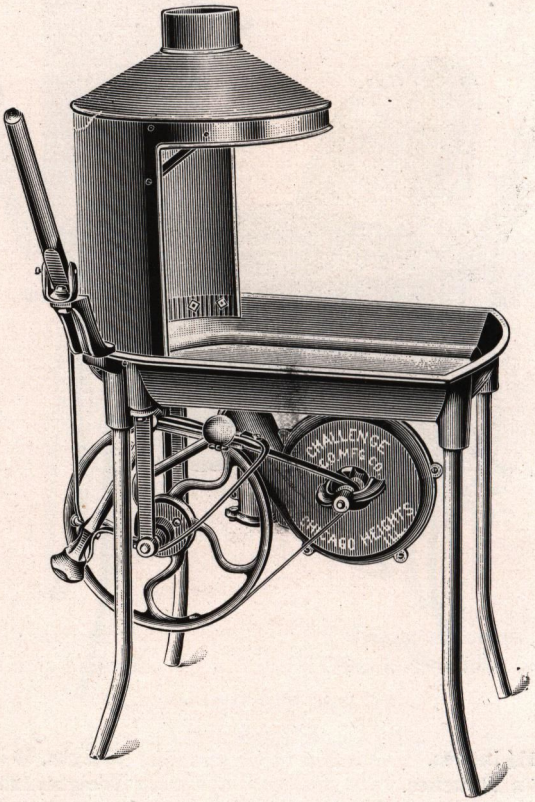
Capacity to Heat 3-inch Iron.

PRICE **$36.00**

FOR LIST OF REPAIRS, SEE PAGE 138.

Challenge Forge No. 3c

Suitable for Machinists, Plumbers, Tin Shops, Locksmiths, Horseshoers, Small Blacksmith Shops, Etc.



Blower, 12½ inches.
Hearth, 35 x 23 inches.

Height, 30 inches.
Weight, 185 pounds.

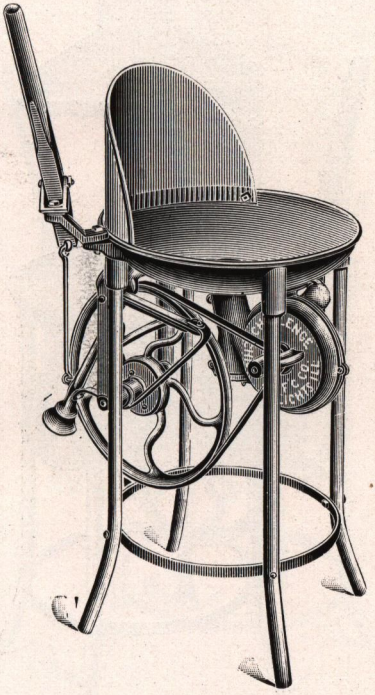
Capacity to Heat 3-inch Iron.

PRICE $40.00

FOR LIST OF REPAIRS, SEE PAGE 138.

Challenge Forge No. 4c

For Quarries, Boilermakers, Mines, Bridgebuilders, Prospectors, Outdoor Work, Etc.



Blower, 9½ inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 120 pounds.

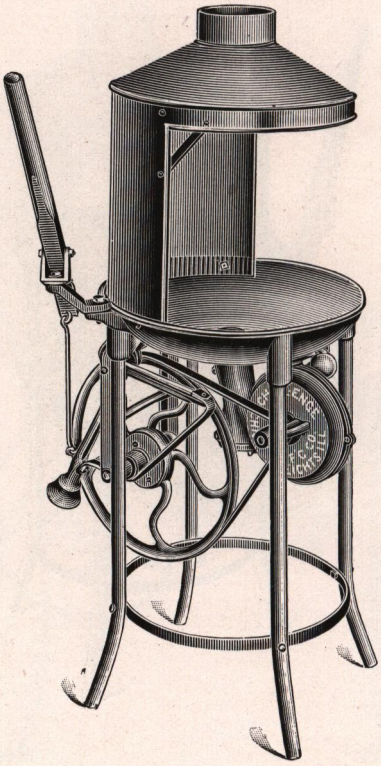
Capacity to Heat 2½-inch Iron.

PRICE **$24.00**

FOR LIST OF REPAIRS, SEE PAGE 140.

Challenge Forge No. 5c

For Bicycle Repair Shops, Toolmakers, Tin Shops, Plumbers, Light Repair Shops of any Kind.



Blower, 9½ inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 125 pounds.

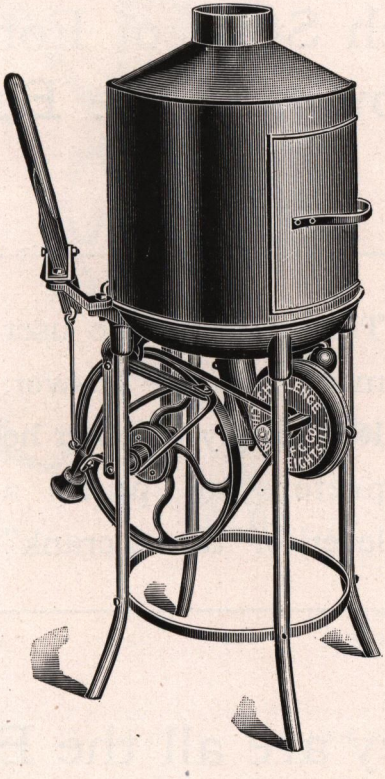
Capacity to Heat 2½-inch Iron.

PRICE $27.00

FOR LIST OF REPAIRS, SEE PAGE 140.

Challenge Forge No. 5½c

For Jewelers, Dentists, Furniture Factories, Sawmills,
Wood Shops, Oil Refineries, Etc.



Blower, 9½ inches.
Hearth, 22 inches.

Height, 33 inches.
Weight, 130 pounds.

Capacity to Heat 2½-inch Iron.

PRICE $29.50

FOR LIST OF REPAIRS, SEE PAGE 140.

We are frequently asked

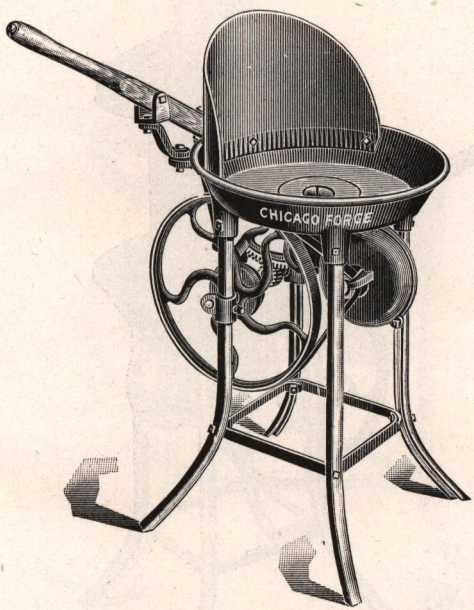
Which Style of Forge or Blower is the Best?

This question the user must himself answer. It is simply whether he prefers to "pump a lever" or "turn a crank"

They are all the Best!

We have a habit of furnishing ONLY THE BEST!

Chicago Forge No. 150



Blower, 8 inches.
Hearth, 18 inches.

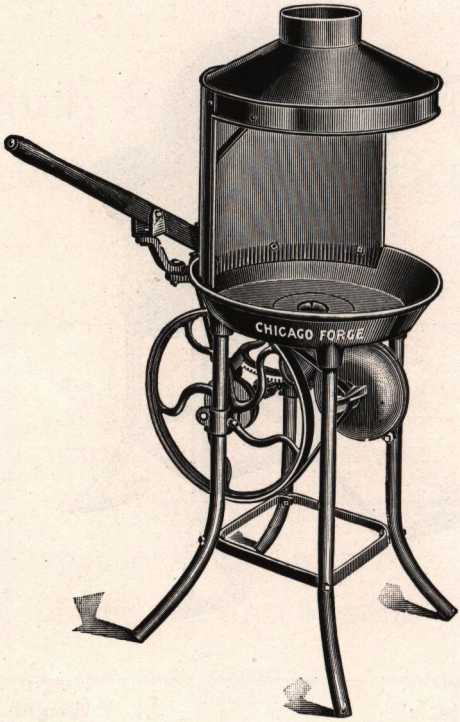
Height, 30 inches.
Weight, 80 pounds.

A light, move-about Forge; adapted to light work. Is suited to quarries, mines, etc., and popular as a low-priced article.

PRICE $14.00

FOR LIST OF REPAIRS, SEE PAGE 142.

Chicago Forge No. 151



Blower, 8 inches.
Hearth, 18 inches.

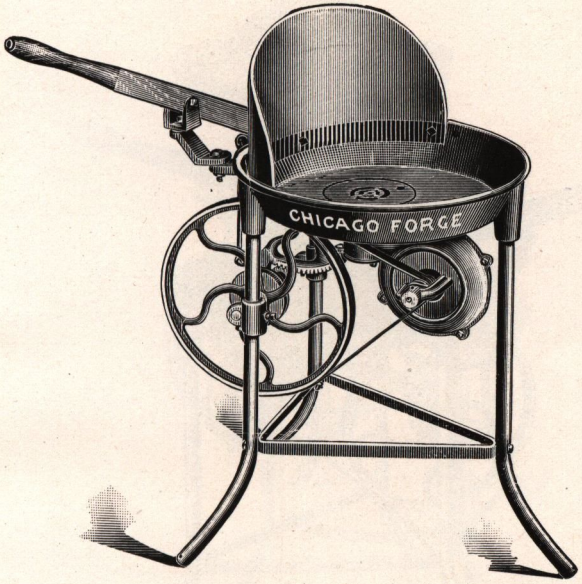
Height, 30 inches.
Weight, 85 pounds.

Suitable for farmers, small shops, toolmakers, etc. Has half-hood for indoor use. An inexpensive Forge and well made.

PRICE $16.00

FOR LIST OF REPAIRS, SEE PAGE 142.

Chicago Forge No. 154



Blower, 8¾ inches.
Hearth, 22 inches.

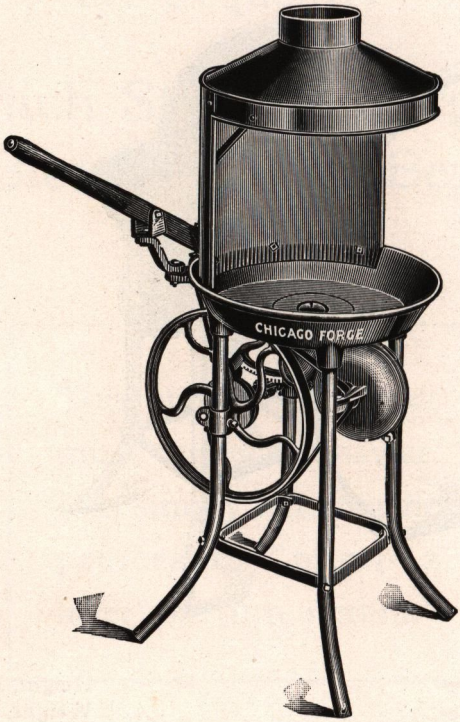
Height, 30 inches.
Weight, 85 pounds.

A very good outdoor Forge for use on ranches, farms, at mines, quarries, etc., where expensive equipment is not a necessity.

PRICE $16.00

FOR LIST OF REPAIRS, SEE PAGE 142.

Chicago Forge No. 151



Blower, 8 inches.
Hearth, 18 inches.

Height, 30 inches.
Weight, 85 pounds.

Suitable for farmers, small shops, toolmakers, etc. Has half-hood for indoor use. An inexpensive Forge and well made.

PRICE $16.00

FOR LIST OF REPAIRS, SEE PAGE 142.

Chicago Forge No. 154

Blower, 8¾ inches.
Hearth, 22 inches.

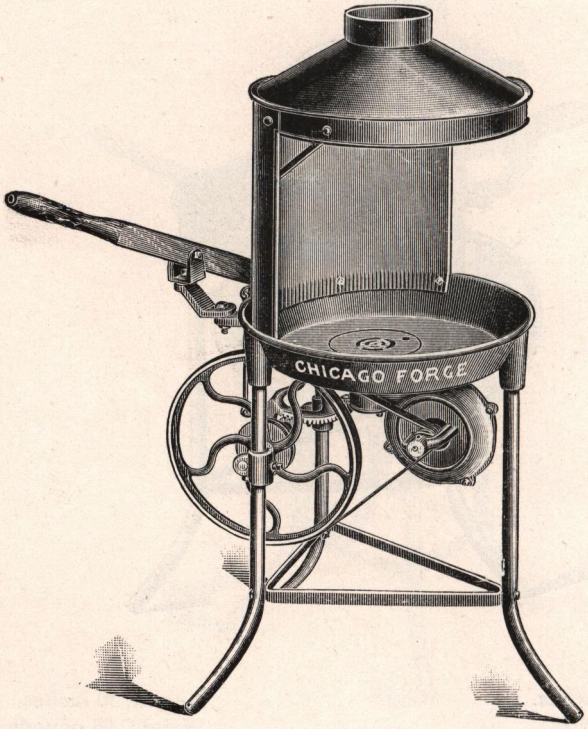
Height, 30 inches.
Weight, 85 pounds.

A very good outdoor Forge for use on ranches, farms, at mines, quarries, etc., where expensive equipment is not a necessity.

PRICE $16.00

FOR LIST OF REPAIRS, SEE PAGE 142.

Chicago Forge No. 155



Blower, 8¾ inches.
Hearth, 22 inches.

Height, 30 inches.
Weight, 90 pounds.

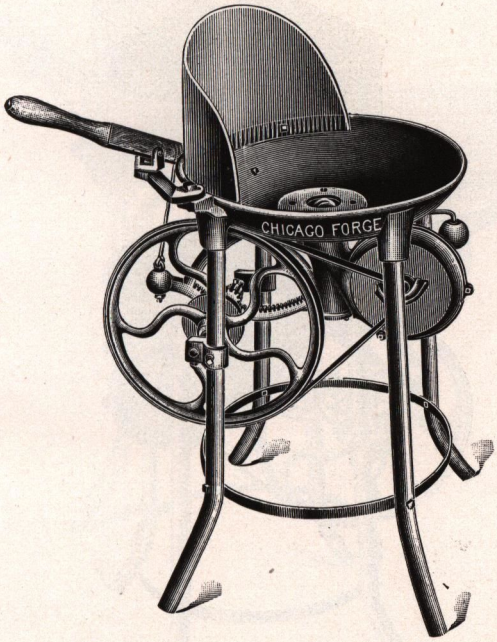
Has half-hood for indoor use, and well adapted to farmers, small shops, etc., where an inexpensive Forge is desired.

PRICE $19.00

FOR LIST OF REPAIRS, SEE PAGE 142.

Chicago Forge No. 156

A Heavy, Strong, Inexpensive Forge, Suitable for Outdoor Work.



Blower, 9½ inches.
Hearth, 22 inches.

Height, 30 inches.
Weight, 120 pounds.

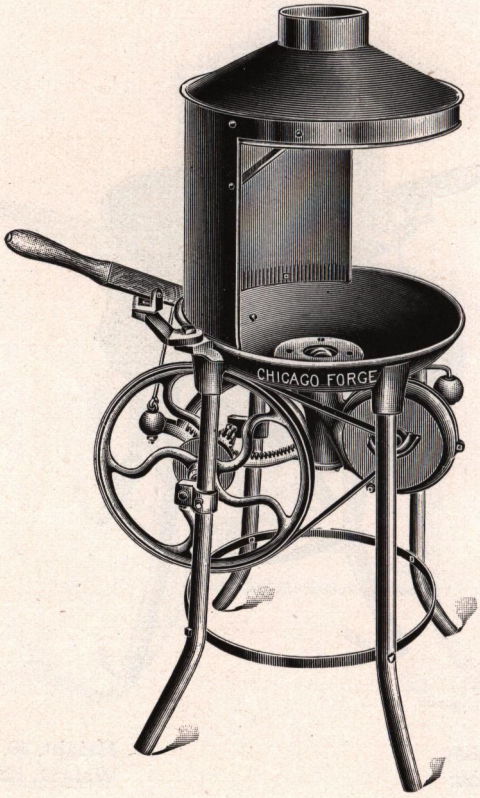
Capacity to Heat 2½-inch Iron.

PRICE **$22.00**

FOR LIST OF REPAIRS, SEE PAGE 144.

Chicago Forge No. 157

A Heavy, Strong, Inexpensive Forge for Indoor Work, Etc.



Blower, 9½ inches.
Hearth, 22 inches.

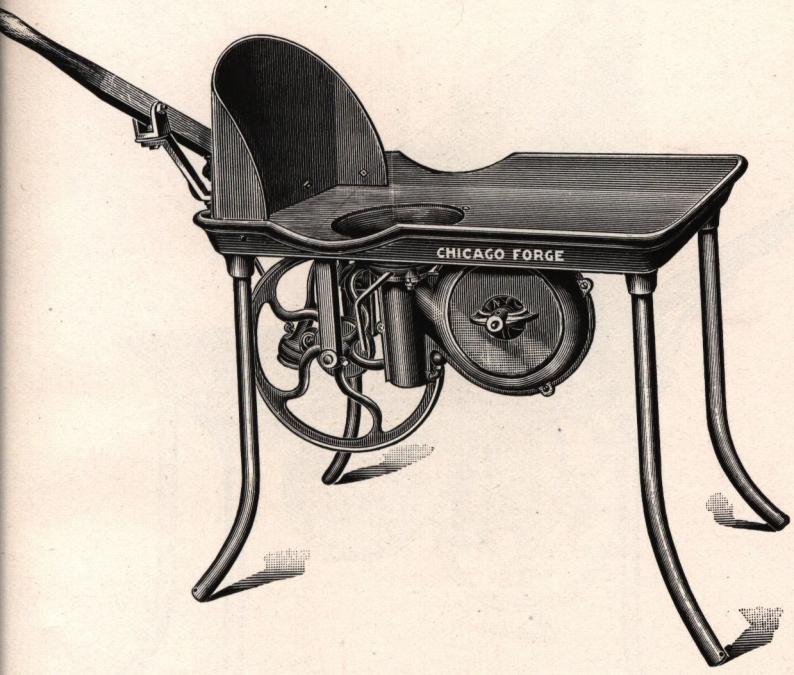
Height, 30 inches.
Weight, 125 pounds.

Capacity to Heat 2½-inch Iron.

PRICE $25.00

FOR LIST OF REPAIRS, SEE PAGE 144.

Chicago Forge No. 152



Blower, 12½ inches.
Hearth, 25 x 36 inches.

Height, 30 inches.
Weight, 170 pounds.

This Forge has a large, roomy Fire-pot, conveniently shaped Hearth and splendid blast; Ratchet Clutch. Is a serviceable Forge at a low cost.

PRICE $34.00

FOR LIST OF REPAIRS, SEE PAGE 142.

Chicago Forge No. 153

Blower, 12½ inches.
Hearth, 25 x 36 inches.

Height, 30 inches.
Weight, 175 pounds.

This Forge has a large, roomy Fire-pot, conveniently shaped Hearth and splendid blast; Ratchet Clutch. Is a very serviceable Forge at a low cost.

PRICE $38.00

FOR LIST OF REPAIRS, SEE PAGE 142.

NOTICE

DON'T leave us to guess at what is wanted on your orders.

If a FORGE, that is listed with and without Hoods, Tanks, etc., state the way you want it.

If a BLOWER, be explicit on essential points: Names and Sizes.

If a DRILL, state whether wanted ***with*** or ***without*** pulleys; also whether CHUCK shall be with ½-inch or 41/64-inch hole.

A little care in these matters will save delays, errors, disappointments.

BLOWERS

Electric
Royal
Tiger
Western Chief
Pressure

Pages 74 to 91

(Repair List in Back of Book)

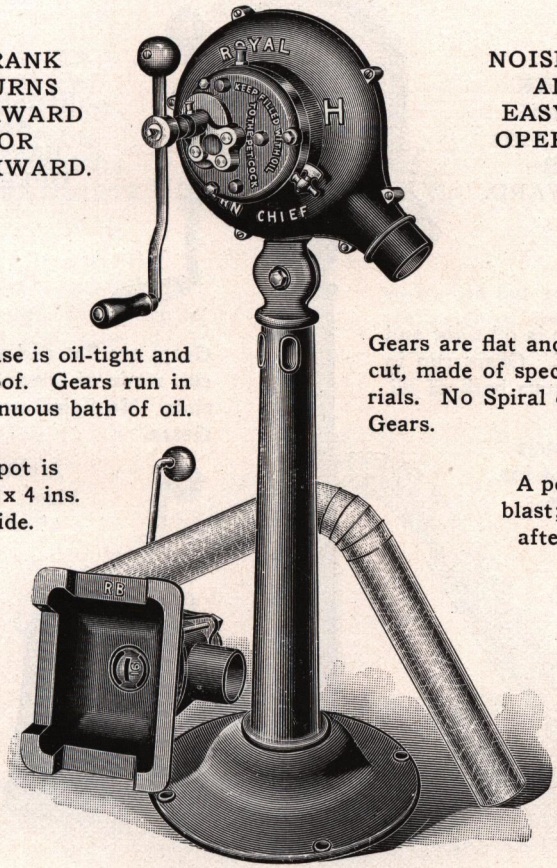
Crank Movement only, Lever Movement only, or both Crank and Lever Movement; Pulley Power; also Motor Power.

ROYAL BLOWER

"THE SUCCESSFUL BLOWER."

CRANK TURNS FORWARD OR BACKWARD.

NOISELESS AND EASY TO OPERATE.



Gear case is oil-tight and dustproof. Gears run in a continuous bath of oil.

Gears are flat and straight cut, made of special materials. No Spiral or Worm Gears.

Fire-pot is 8 x 9½ x 4 ins. inside.

A powerful blast; lasting after blast.

Blower, 12 inches. Height, 47 inches. Weight, 135 pounds.

PRICE	Complete as shown	$28.00
	Without Tuyere	24.50
	Without Stand, but with Tuyere . . .	25.50

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal (Left-Hand) Blower

"THE SUCCESSFUL BLOWER."

CRANK TURNS FORWARD OR BACKWARD.

NOISELESS AND EASY TO OPERATE.

Gear case is oil-tight and dustproof. Gears run in a continuous bath of oil.

Gears are flat and straight cut, made of special materials. No Spiral or Worm Gears.

Fire-pot is 8 x 9½ x 4 ins. inside.

A powerful blast; lasting after blast.

Blower, 12 inches. Height, 47 inches. Weight, 135 pounds.

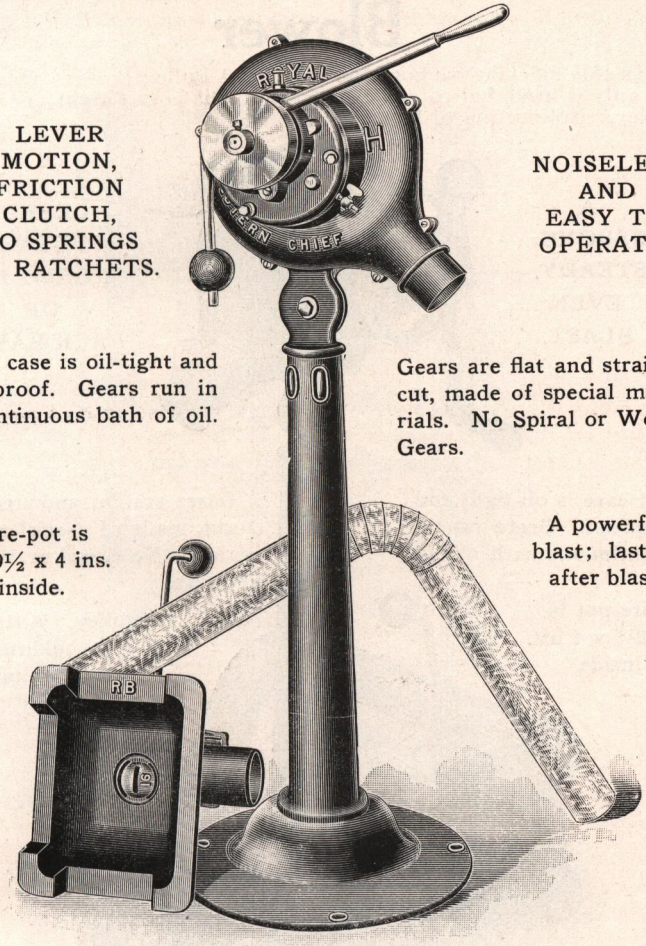
PRICE		
	Complete as shown	$28.00
	Without Tuyere	24.50
	Without Stand, but with Tuyere . . .	25.50

FOR LIST OF REPAIRS, SEE PAGE 124.

Royal Hand-Lever Blower

LEVER MOTION, FRICTION CLUTCH, NO SPRINGS OR RATCHETS.

NOISELESS AND EASY TO OPERATE.



Gear case is oil-tight and dustproof. Gears run in a continuous bath of oil.

Gears are flat and straight cut, made of special materials. No Spiral or Worm Gears.

Fire-pot is 8 x 9½ x 4 ins. inside.

A powerful blast; lasting after blast.

Blower, 12 inches. Height, 47 inches. Weight, 145 pounds.

Can be furnished to operate with the right arm, for **left-handed** smiths, when desired.

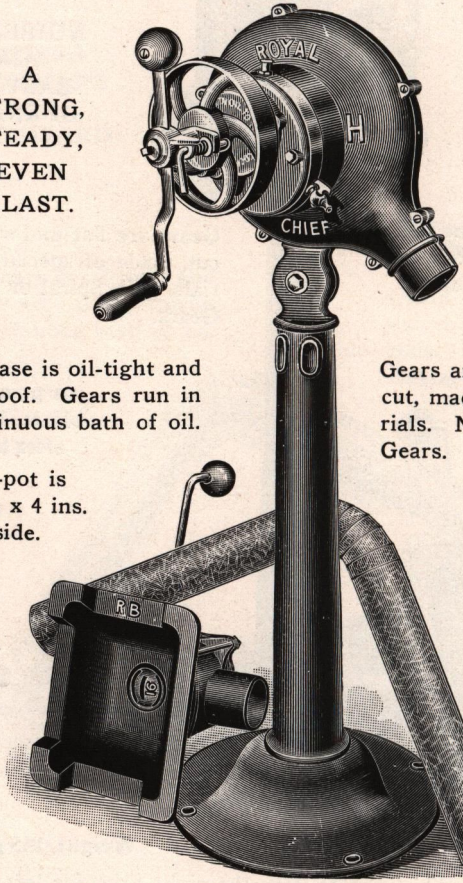
PRICE	**Complete as shown**	**$28.00**
	Without Tuyere	**24.50**
	Without Stand, but with Tuyere . . .	**25.50**

Royal "Hand and Power" Blower

In this machine we combine Hand and Pulley Power. One pulley only is used, but so constructed that it is both a **tight** and **loose** pulley. No shifting of belt.

A STRONG, STEADY, EVEN BLAST.

CRANK TURNS FORWARD OR BACKWARD.



Gear case is oil-tight and dustproof. Gears run in a continuous bath of oil.

Gears are flat and straight cut, made of special materials. No Spiral or Worm Gears.

Fire-pot is 8 x 9½ x 4 ins. inside.

Pulley, 7½x1⅞ in. should run 35 rev. per minute.

Blower, 12 inches. **Height, 47 inches.** **Weight, 145 pounds.**

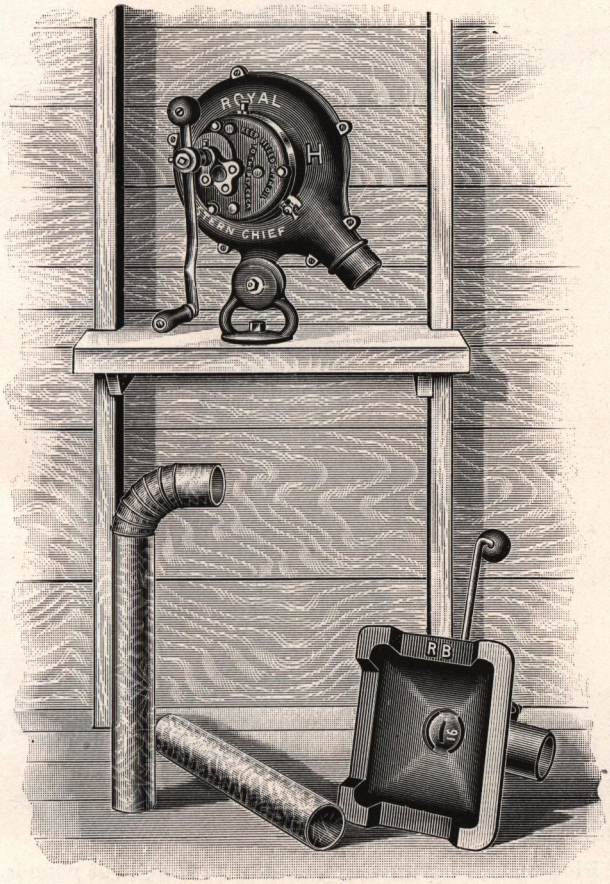
The neatest Combined Hand and Power Blower on the market.

PRICE

Complete as shown	**$35.00**
Without Tuyere	**31.50**
Without Stand, but with Tuyere . . .	**32.50**

Royal "Bench" Blower

To accommodate those who do not have room for a Blower with stand, or those who prefer to place a Blower on a shelf or bench, we have arranged the **Royal Blower** with a bench stand.



Blower, 12 inches.
Crank Turns Forward or Backward.

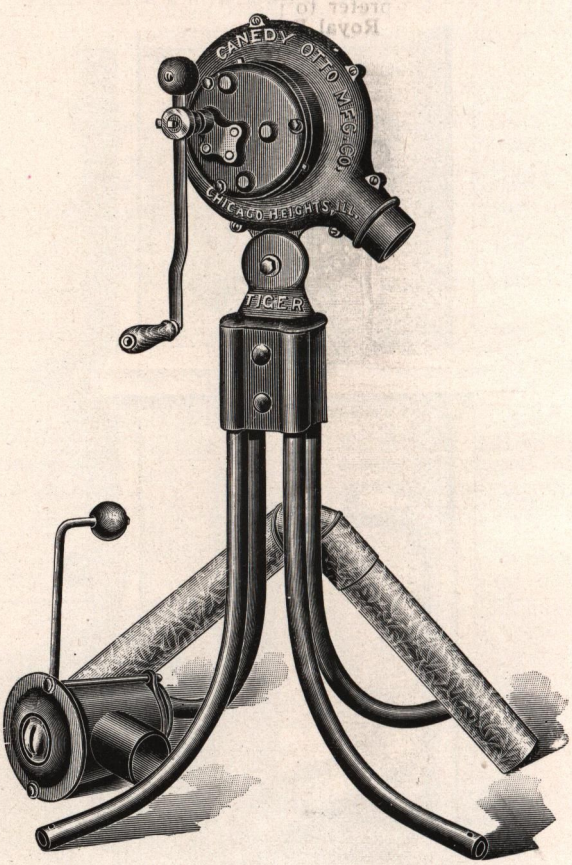
Royal Fire-pot Tuyere Iron.
Needs no Clay.
Size, 8 x 9½ x 4 inches inside.

PRICE { **With Tuyere (as illustrated), weight 100 lbs. $25.00**
Without Tuyere, weight 50 lbs. 21.00

FOR LIST OF REPAIRS, SEE PAGE 124.

Tiger Blower

Cut Gears, Oil-tight and Dustproof Gear Case. Crank Turns Forward or Backward. A Good, Serviceable Article.



Blower, 11½ inches **Weight, 95 pounds.**

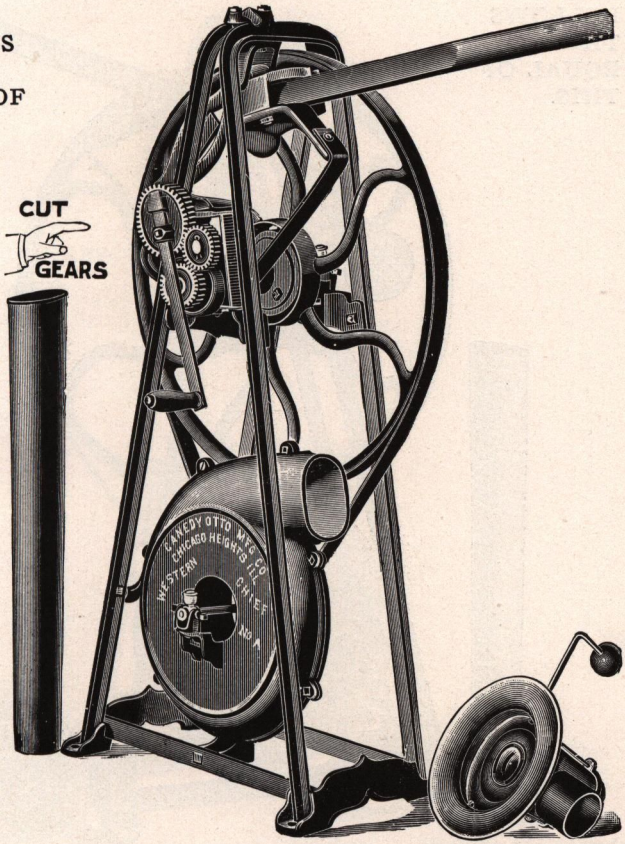
The Tiger Blower is made by us to meet the demand for a blower of ordinary construction and less expensive than our higher and better grade of "Royal" Blowers. It gives a good blast, and is neatly finished.

PRICE $20.00

Western Chief Blower
Size A

(Both Crank and Lever Movement.)

NO BELLOWS THE EQUAL OF THIS.



Blower, 16½ inches. **Fly-wheel, 27 inches.** **Weight, 190 pounds.**

It is equipped throughout with Brass Boxes and Oil Cups and has Noiseless, Adjustable Steel Friction Clutch. Can be furnished to operate with **right arm** for **left-handed** smiths, when desired.

Power Attachment (Pulleys, 7½ x 1¾ inches), $2.50 net extra.

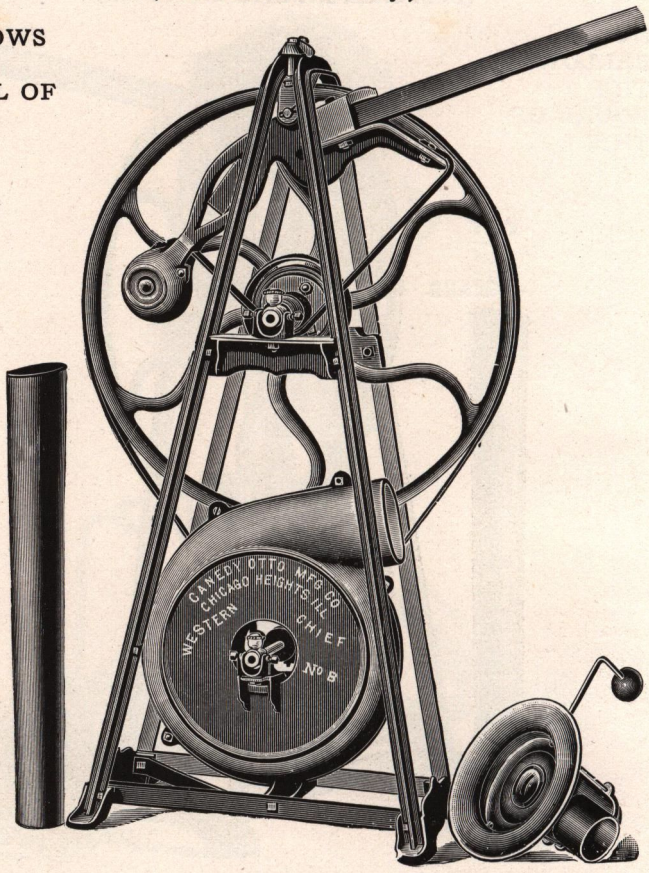
PRICE $32.00

FOR LIST OF REPAIRS, SEE PAGE 146.

Western Chief Blower
Size B

(Lever Movement Only.)

NO
BELLOWS
THE
EQUAL OF
THIS.



Blower, 16½ inches. **Fly-wheel, 27 inches.** **Weight, 180 pounds.**

Is equipped throughout with Brass Boxes and Oil Cups; has Noiseless, Adjustable Steel Friction Clutch. Can be furnished to operate with **right arm** for **left-handed** smiths, when desired.

PRICE $27.00

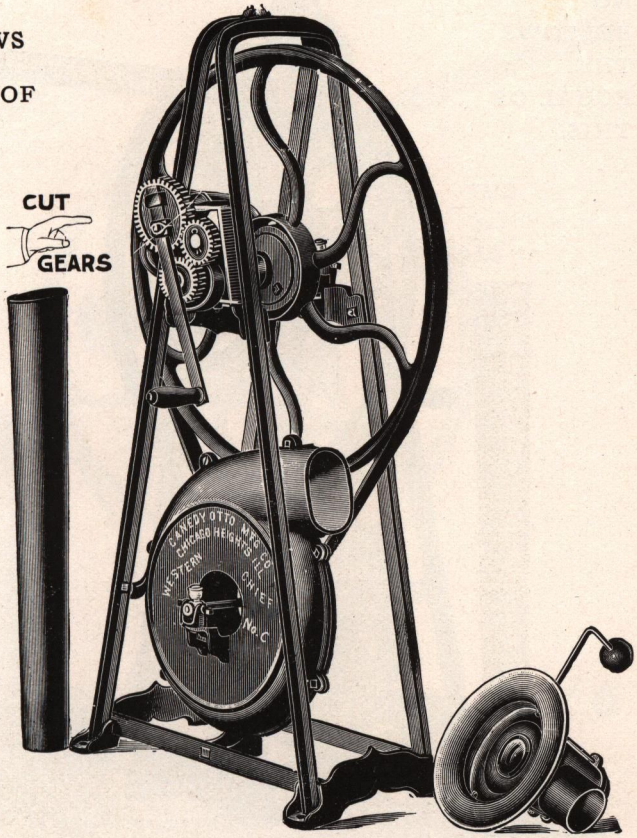
Power Attachment (Pulleys, 7½ x 1¾ inches), $2.50 net extra.

FOR LIST OF REPAIRS, SEE PAGE 146.

Western Chief Blower
Size C

(Crank Movement Only.)

NO BELLOWS THE EQUAL OF THIS.



Blower, 16½ inches. **Fly-wheel, 27 inches.** **Weight, 165 pounds.**

It is equipped throughout with Brass Boxes and Oil Cups. As soon as crank is released it drops to lower side and gear wheels stop. Can be furnished to operate with **right arm** for **left-handed** smiths, when desired.

PRICE $27.00

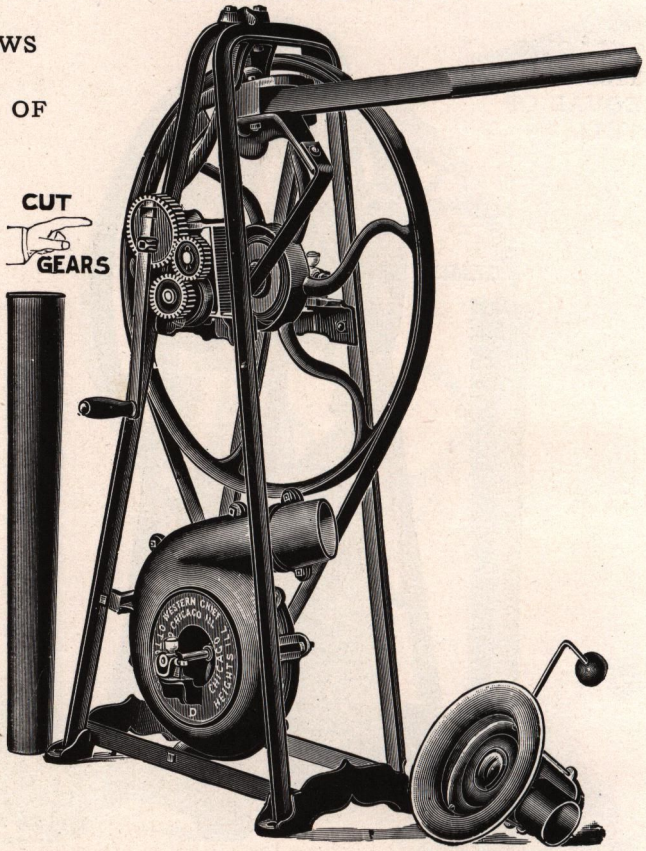
Power Attachment (Pulleys, 7½ x 1¾ inches), $2.50 net extra.

FOR LIST OF REPAIRS, SEE PAGE 146.

Western Chief Blower
Size D

(Both Crank and Lever Movement.)

NO BELLOWS THE EQUAL OF THIS.



Blower, 14½ inches. Fly-wheel, 27 inches. Weight, 185 pounds.

Is equipped throughout with Brass Boxes and Oil Cups and Noiseless, Adjustable Steel Friction Clutch. It has both crank and lever movement, which work independently of each other.

PRICE $28.50

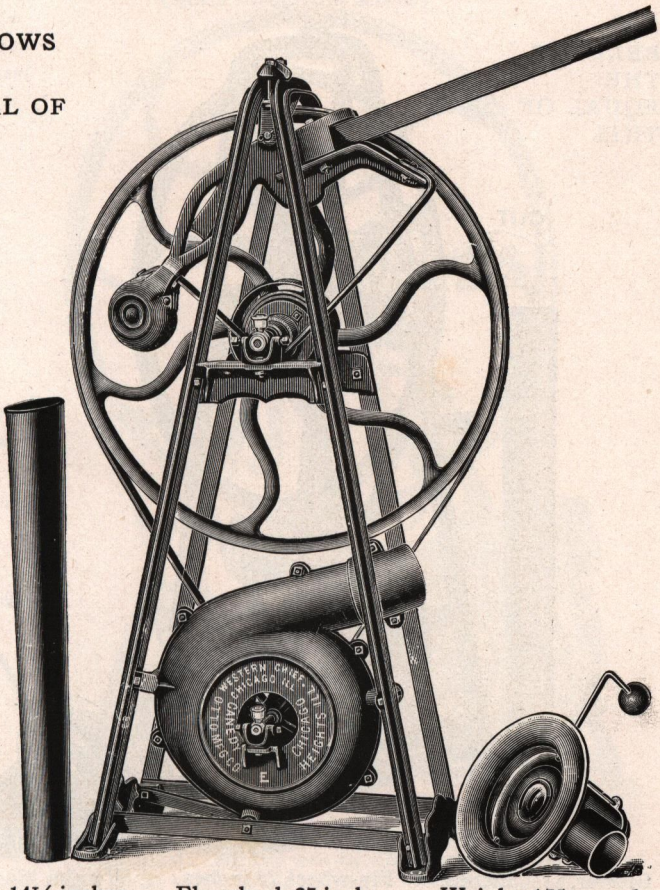
Power Attachment (Pulleys, 7½ x 1¾ inches), $2.50 net extra.

FOR LIST OF REPAIRS, SEE PAGE 148.

Western Chief Blower
Size E

(Lever Movement Only.)

NO
BELLOWS
THE
EQUAL OF
THIS.



Blower, 14½ inches. **Fly-wheel, 27 inches.** **Weight, 175 pounds.**

Is equipped throughout with Brass Boxes and Oil Cups and has Noiseless, Adjustable Steel Friction Clutch.

PRICE $23.50

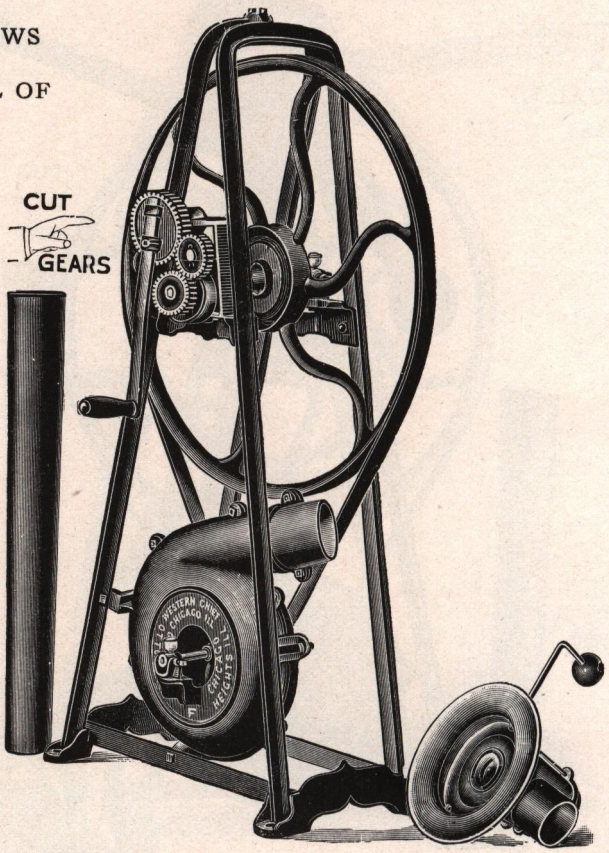
Power Attachment (Pulleys, 7½ x 1¾ inches), $2.50 net extra.

FOR LIST OF REPAIRS, SEE PAGE 148.

Western Chief Blower
Size F

(Crank Movement Only.)

NO
BELLOWS
THE
EQUAL OF
THIS.



Blower, 14½ inches. **Fly-wheel, 27 inches.** **Weight, 160 pounds.**

It is equipped throughout with Brass Boxes and Oil Cups. As soon as crank is released it drops to lower side and gear wheels stop.

PRICE $23.50

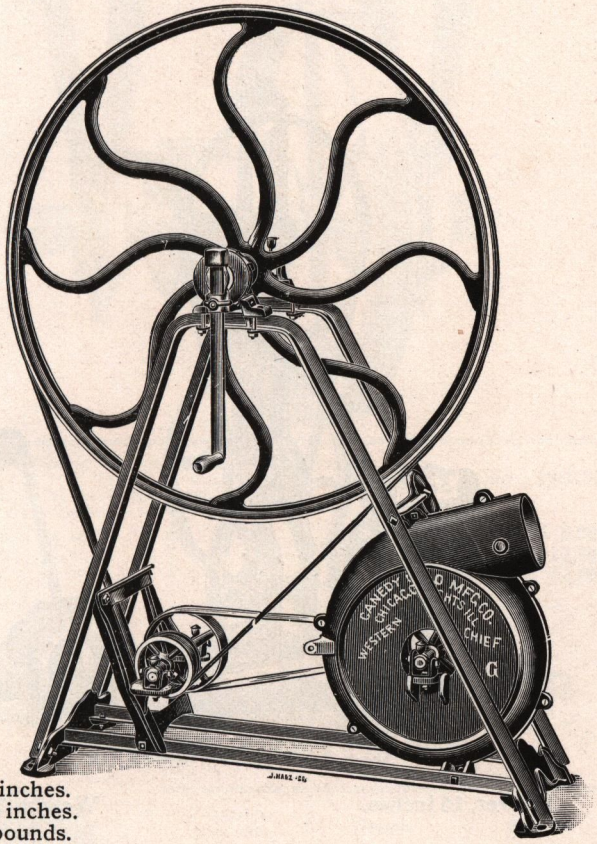
Power Attachment (Pulleys, 7½ x 1¾ inches), $2.50 net extra.

FOR LIST OF REPAIRS, SEE PAGE 148.

Western Chief Blower
Size G

(Crank Movement Only.)

The Only Successful Big-Wheel Blower.



Pipe and Tuyere Iron furnished with every Machine.

Blower, 16½ inches.
Fly-wheel, 36 inches.
Weight, 180 pounds.

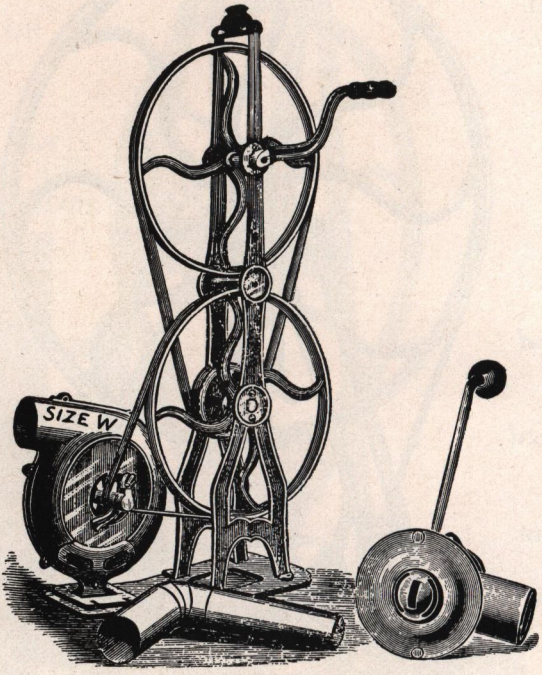
A very powerful blast. By the use of countershaft, this 36-inch Wheel runs the Fan at same speed as other 48-inch wheel blowers, and also admits of looser belts without slipping. It takes but little room and runs very easily. Is equipped throughout with Brass Boxes and Oil Cups. The crank is adjustable (long or short) to suit operator's arm. Can be furnished to operate with **right arm** for **left-handed** smiths, when desired.

PRICE $35.00

FOR LIST OF REPAIRS, SEE PAGE 150.

Just a Common Blower

We call it simply "SIZE W"



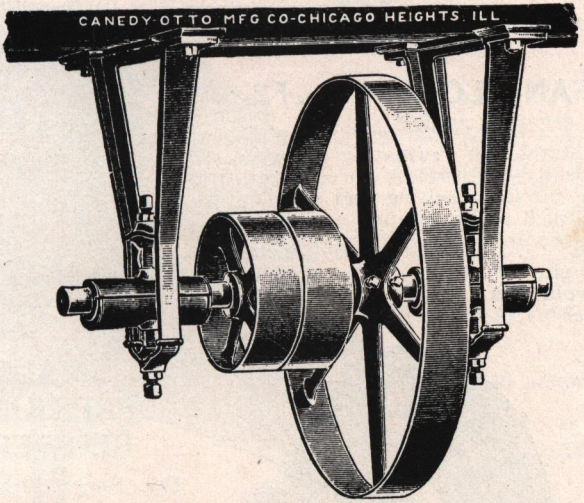
Blower, 16 inches. **Weight, 160 pounds.**

PRICE (complete as illustrated) . $19.00

It is made with crank movement only. It is not modern nor up to date in any respect, and no special guarantee beyond ordinary adaptability is placed upon it.

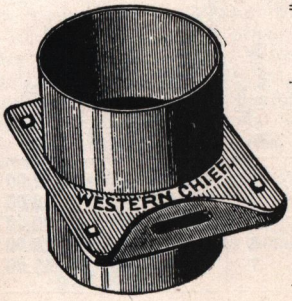
Western Chief Countershafts

For Pressure Blowers, Etc.



SIZE	Driving Pulleys		Tight and Loose Pulleys		Diameter of Shaft	Weight	PRICE
	Diam.	Width	Diameter	Width			
P 1	10¾ in.	2½ in.	4 in.	2 in.	⅞ in.	50 lbs.	$ 8.00
P 3	14 "	2¾ "	6 "	2½ "	1⅛ "	60 "	12.00
P 5	18 "	3½ "	7 "	3¼ "	1⅜ "	75 "	16.00

Western Chief Cast-Iron Blast Gates



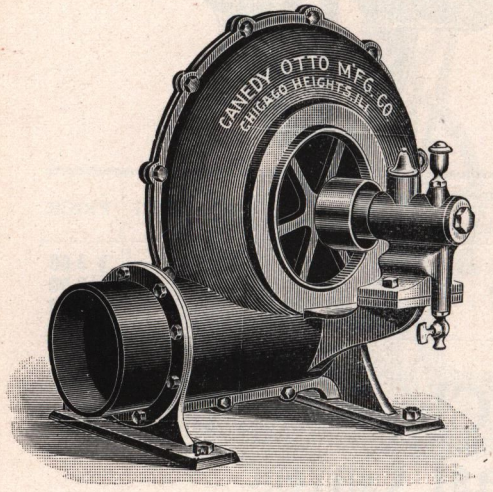
Outside Diameter	Weight	PRICE
2½ inches	3 pounds	$1.25
3 "	5 "	1.50
4 "	6 "	1.75
4½ "	9½ "	2.00
5 "	11 "	2.25
6 "	15 "	2.50
7½ "	18½ "	3.25
8 "	23 "	3.50

Western Chief Power Blowers

FAN BLOWER No. F2

This is a light, neat, power Fan Blower, very desirable for ventilating purposes, and has capacity for two or three forge fires. Suitable for light belting and ordinary use. Has 1¾-inch pulley for belt connections.

Size ..... 16½ inches.
Weight ..... 55 lbs.
Revolutions ..... 1,500 to 2,000
Price $13.00



SMALL PRESSURE BLOWERS

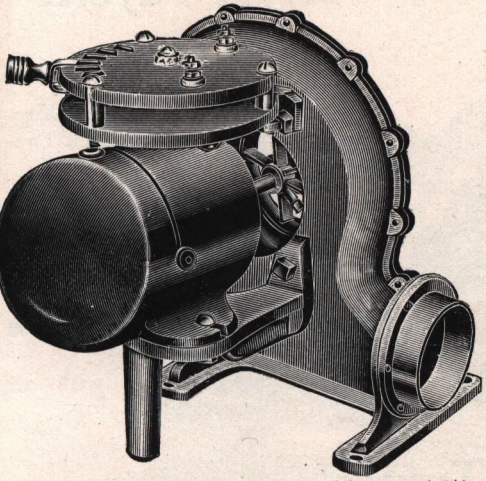
For Forge Fires, Etc.

These Blowers are adapted to forge fires and small, light cupola work. They are very strong and durable, smooth running, and handsome in appearance. Sizes P3, P4 and P5 have grease cup in addition to oil cup, so that should oil cup run dry the grease cup will continue to lubricate and prevent heating. Built for service.

No. of Blower.	Height in Inches.	Diameter of Inlet.	Diameter of Outlet.	Diameter of Pulley.	Face of Pulley.	Revolutions per Minute 2-oz. Blast for Boiler Fires.	Revolutions per Minute 4-oz. Blast for Forge Fires.	No. of Forge Fires.	Sq. Ft. of Boiler Grate Surface Supplied by Blower.	Weight, Pounds.	H. P. Required, About.	PRICE.
P 1	10	3¼	2¾	1⅞	1¼	3,675	4,640	1	2	15	¼	$12.00
P 2	15	4½	4¼	3	2	3,000	4,000	2	5	35	⅓	18.00
P 3	18	5¼	4¾	3	2	2,600	3,600	4	6	50	1	20.00
P 4	20	6½	5¾	3½	2½	2,300	3,200	5	8	70	1¼	28.00
P 5	24	7	7½	4⅜	3¼	1,928	2,680	7	10	105	1¾	33.00

Canedy-Otto P1 Electric Blower

With Dustproof, 110 or 220 Volt Motor.
Furnished for Either Alternating or Direct Current Circuits.



Height, 10 inches.

Diameter of inlet, 3¼ inches.

Diameter of outlet, 2¾ inches.

Number of forge fires, one.

Weight, 15 pounds.

Revolutions per minute, 0 to 2,750.

The P1, One-fire, Changeable-speed Electric Blacksmith Blower has a motor of a special type, developed exclusively for this service. Because of the hard service that an electric blower is put to in a blacksmith shop (due to the soot and dust, which shortens the life of a motor) it has been necessary to provide more durability than is usually required. This motor is, therefore, completely **enclosed in a dustproof case, and of such efficiency as to run with moderate temperature, without ventilation, and is equipped with automatic means of lubrication.** This outfit is supplied with a five-speed, durable type of regulating switch, for starting and controlling the speed of the motor, attached right on the blower, just above the motor, which saves the operator the unnecessary trouble of stooping over, or leaving his work, to get the desired blast.

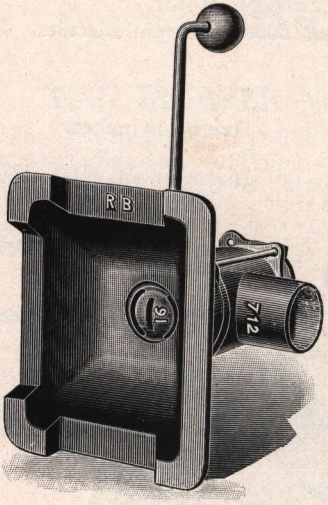
Cost of operation, 2 to 3 cents per day. Economy in use and strain on motor will be saved if run just fast enough to give satisfactory results. When brushes on motor become worn, they should be replaced at once with others of our manufacture, as they are of special carbon. When changing brushes or adjusting motor, before starting it again, it should be properly aligned by the paint marks on the ring and the head of the motor. See that the oil cup is kept filled.

When ordering Electric-driven Forges or Blowers, furnish us with the following information:

1. Whether current is **alternating** or **direct.**
2. If alternating current, find out cycles or alternations, and state whether 110 or 220 volts.
3. Our standard motors are designed for 60 cycles, or 7,200 alternations.
4. If direct current, the voltage is all the information needed.

PRICE $36.00

TUYERE IRONS



Royal Tuyere

NEEDS NO CLAY.

A large, heavy, solid iron Fire-pot, with side and center blast Tuyere Ball.

Measures 8 x 9½ x 4 inches inside.
Weighs 50 pounds.
Diameter of inlet, 3 inches.

PRICE **$5.00**

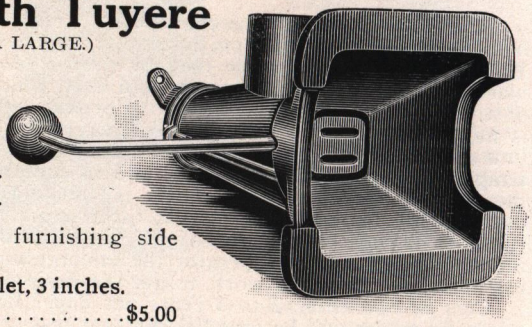
(Furnished regularly with all "Royal" Blowers.)

Mammoth Tuyere

(EXTRA LARGE.)

Size (inside)
9 x 11½ in., 4 in., deep.

No clay required.
Weighs 55 pounds.

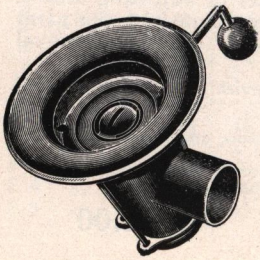


Has square ball, furnishing side and center blast.

Diameter of inlet, 3 inches.

PRICE **$5.00**

(This Tuyere will be furnished with "Royal" Blowers, no extra charge, if requested.)



Western Chief Tuyere

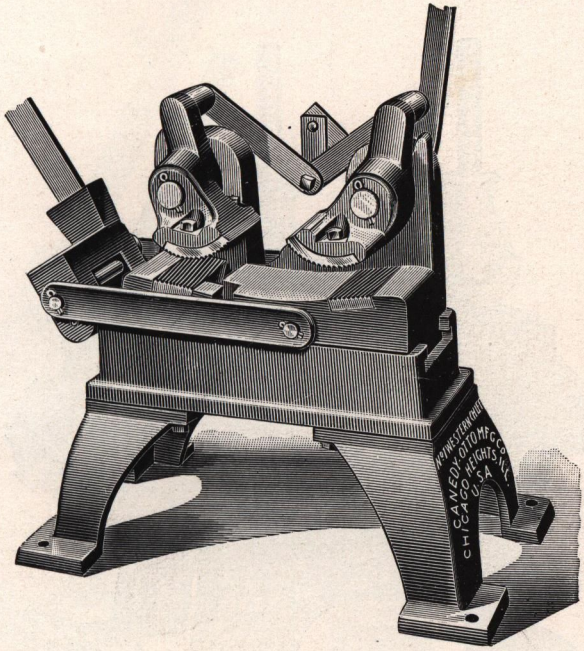
Has a loose ring top which rests on clay, to prevent falling or crumbling.

Weighs 40 pounds.
Diameter of inlet, 3 inches.

PRICE **$2.50**

Western Chief (TIRE and AXLE SHRINKER) No. 1

Jaws Adjust Themselves to Uneven Thicknesses with One Motion of the Lever.



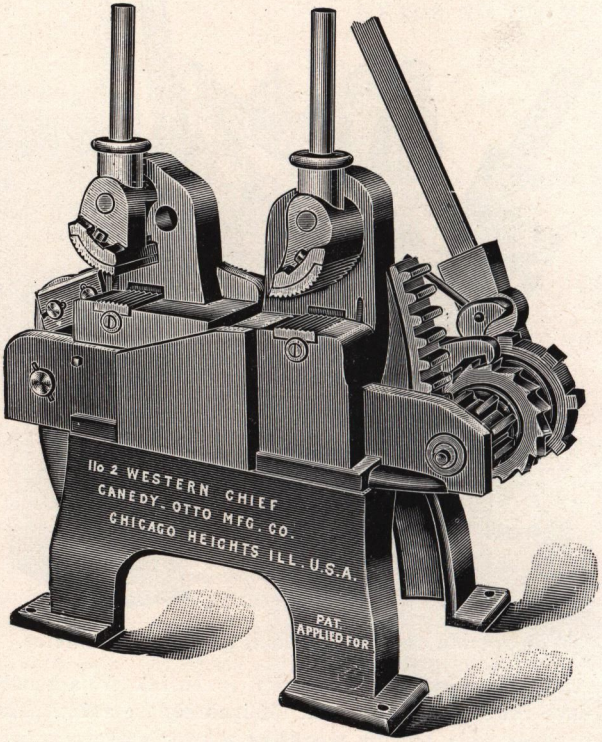
Will operate on tires as small as 26-inch diameter.

A strong machine, with capacity to shrink from smallest to 4 by 1-inch round-edge tires, and 1¼-inch square axles. The Jaws are 4½ inches wide, and by means of a lever movement with universal joints they grip independently of each other, thereby adjusting themselves to uneven thicknesses, and with but one motion of the lever. The bed has open-and-shut or shrinking movement of 1½ inches. Ample space and strength is provided for pounding out bulges in tires. The jaw teeth are machine-cut Tool Steel properly hardened.

Weight, 360 pounds.

PRICE $40.00

Western Chief (Combination Tire and Axle Upsetter and Welder) No. 2



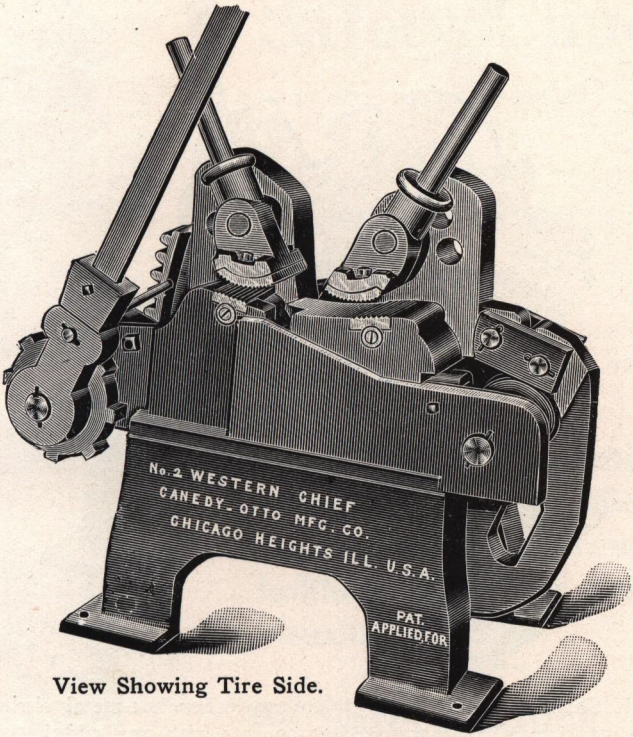
View Showing Axle Side.

Size of Jaws, 3½ inches wide.

Will Shrink from Smallest to 3½-inch Square Axles.

For general description, weight, price, etc., see opposite page.

Western Chief (Combination Tire and Axle Upsetter and Welder) No. 2



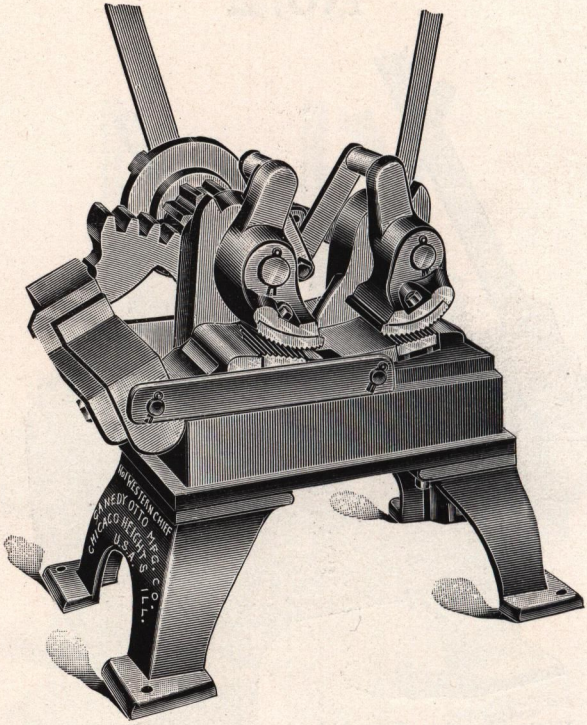
View Showing Tire Side.

In presenting this machine to the trade, we have some new and entirely original mechanical features, not to be found on any other shrinker on the market. In this powerful machine we combine two separate machines in one by simply removing the top jaws to side of the machine for which the work to be done is adapted. This machine is built on the most modern mechanical principles. The leverage is applied in a manner to the sliding head so the line of force comes directly in line with the working strain, thereby reducing the friction on the slides until it is too little to mention, **making it easy for one man to operate.** The jaws are made of refined tool steel, machine-cut and properly tempered.

Size of Jaws, tire side, 4½ inches wide, and will shrink from the smallest to 5 x 1¼ inch round-edge tires. **Weight, 915 pounds.**

PRICE $100.00

Western Chief (Tire and Axle Shrinker) No. 1½



This Shrinker is far superior to any other hot-metal shrinker on the market, and is guaranteed to operate with one-half the labor of any shrinker of equal capacity.

The Shrinking Lever pulls toward the machine, not away, as is the case with other makes, and with a powerfully arranged gearing a light man can operate this Shrinker to its full capacity.

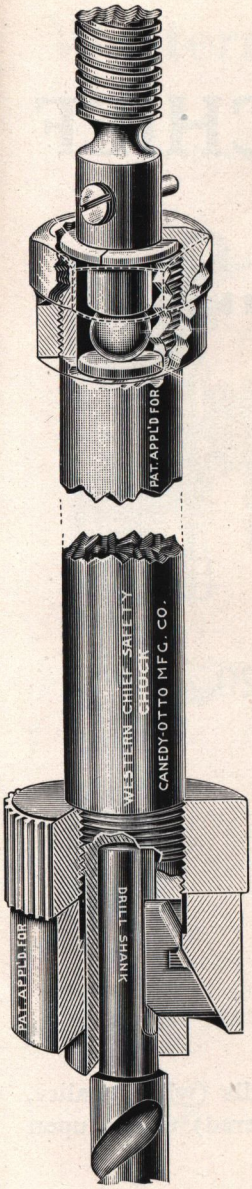
The Bed has an open-and-shut movement of 1 5-6 inches.

The Jaws are machine-cut, tool steel, properly hardened.

Size of Jaws, 4½ inches wide, and will shrink from smallest to 4 x 1 inch round-edge tires, and 1¼-inch square axles.

Weight, 400 pounds.

PRICE $40.00



SECTIONAL VIEW OF

Ball-Bearing and Safety Chuck

As furnished on Western Chief Drills Nos. 1, 2, 3, 7, 12, 14, 15, 16, 17, 18 and 19.

Ball-Bearing

A single Steel Ball resting on a hardened Steel Disc. This contact of Ball and Disc forms a bearing in which the friction is too little to estimate.

These two features entirely overcome the old friction bearing, and set-screw for holding bits, that are so objectionable.

Safety Chuck

It is opened and closed with the hand.

No more set-screws to mar and bruise the shanks of bits.

No more wrenches to tighten and loosen set-screws.

No more twisting of bits in the chuck.

No more trouble in inserting and removing bits from chuck.

Brown-Wales Co.

WESTERN CHIEF DRILLS

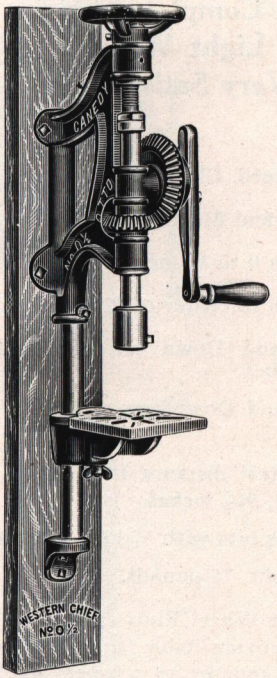
Pages 98 to 120

(Repair List in Back of Book)

The most complete line of Post Drills (when quality, desirability and general value are considered) that is upon the market.

Western Chief Drill No. 0½

A SINGLE-GEARED, HAND-FEED DRILL.



Our No. 0½ Drill is a Neat, Durable Article, but is Hand-feed Only.

Bores 0 to ¾ inch.

Drills to center of 12-inch Circle.

Up and Down run of Spindle, 2¾ inches.

Up and Down run of Table, 9½ inches.

Greatest distance from Table to Spindle, 9½ inches.

Takes bits with ½-inch Shanks.

Weight, 50 pounds.

Light Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

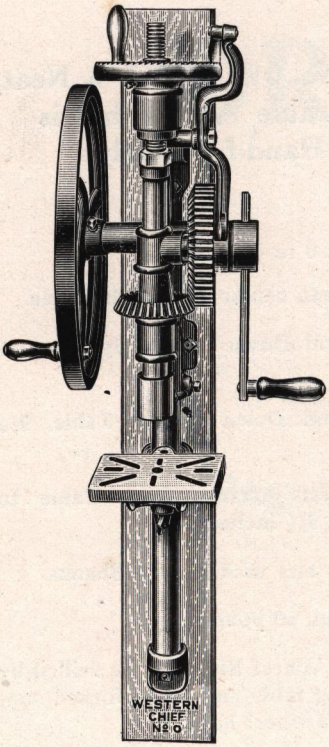
BEST MATERIALS IN ITS CONSTRUCTION.

PRICE $5.50

FOR LIST OF REPAIRS, SEE PAGE 152.

Western Chief Drill No. 0

NEAT, LIGHT AND DURABLE.



Our No. 0 Drill is Simple, yet Complete, and for Light Work is Very Satisfactory.

Self-feed, Changeable Speed.

Fast and Slow speed.

Bores 0 to ¾ inch.

Drills to center of 12-inch Circle.

Up and Down run of Spindle, 2¾ inches.

Up and Down run of Table, 9½ inches.

Greatest distance from Table to Spindle, 9½ inches.

Takes bits with ½-inch shanks.

Weight, 75 pounds.

Light Wheel Rims can be drilled by removing table and using the forked support as a wheel holder.

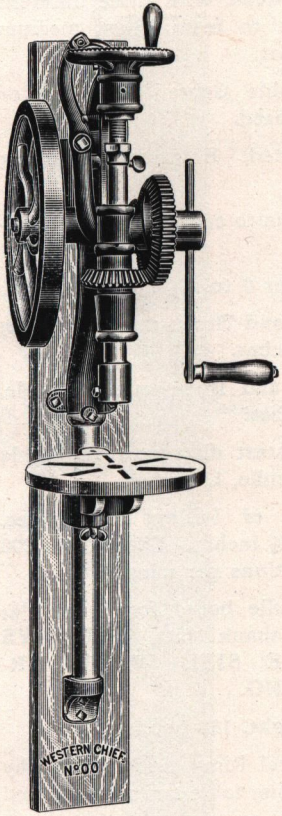
THE BEST MATERIAL IS USED IN ITS CONSTRUCTION. STEEL MANDREL, SHAFTS AND FEED SCREW.

PRICE $7.50

FOR LIST OF REPAIRS, SEE PAGE 152.

Western Chief Drill No. 00

A RELIABLE DRILL AT THE LOWEST COST.



Two speeds, Fast and Slow.

Self-feed, Changeable Speed.

Drills to center of 15-inch Circle.

Bores from 0 to 1¼ inches.

Up and Down run of Spindle, 3 inches.

Up and Down run of Table, 10¾ inches.

Greatest distance from Spindle to Table, 13 inches.

Size of Pulleys for Power, 8 x 2⅛ inches. Should run 200 revolutions per minute.

Spindle bored for ½ or 41/64 inch Shank Bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 110 pounds.

Light Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

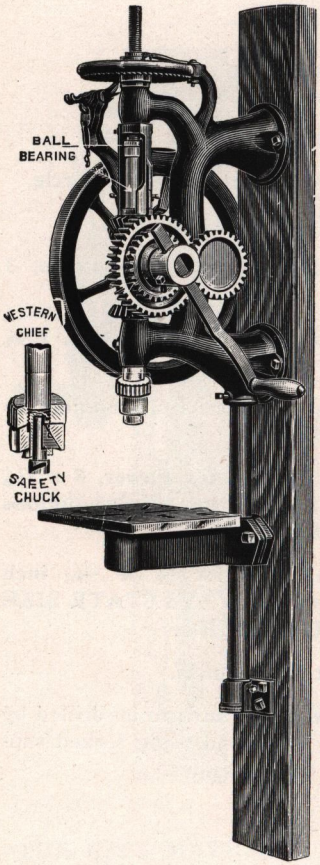
PRICE $10.00

Power Attachment, $2.00 net extra.

FOR LIST OF REPAIRS, SEE PAGE 154.

Western Chief Drill No. 1

"QUICK RETURN."



Self-feed, with three different speeds to feed: slow, medium and fast.

Double Geared for slow or fast speed.

Slotted, Rotating, Swinging Table.

Drills to center of 15-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 2¾ inches.

Up and Down run of Table, 13 inches.

Greatest distance from Table to Spindle, 13 inches.

Size of Pulleys for Power, 8 x 2⅛ inches. Should run 200 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 130 pounds.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

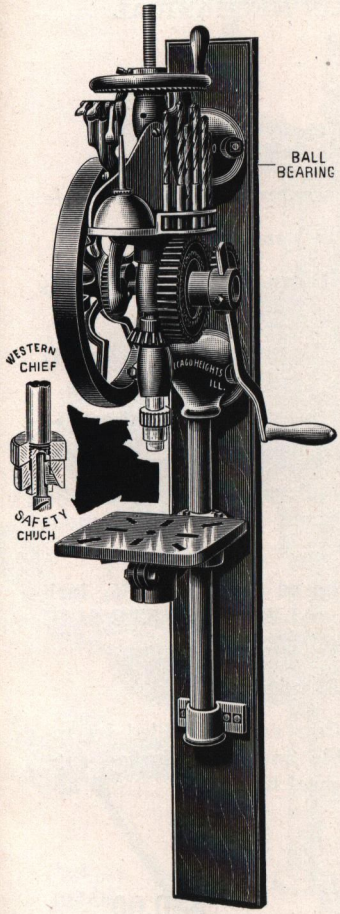
PRICE $15.00

Power Attachment, $2.00 net extra.

FOR LIST OF REPAIRS, SEE PAGE 156.

Western Chief Drill No. 2

A FIRST-CLASS DRILL AT A VERY REASONABLE PRICE.



Self-feed, with three different speeds to feed: slow, medium and fast.

Double Geared for Slow or fast speed.

Slotted, Rotating, Swinging Table.

Drills to center of 15-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 3¼ inches.

Up and Down run of Table, 13 inches.

Greatest distance from Table to Spindle, 13 inches.

Size of Pulleys for Power, 8 x 2⅛ inches. Should run 200 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 125 pounds.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

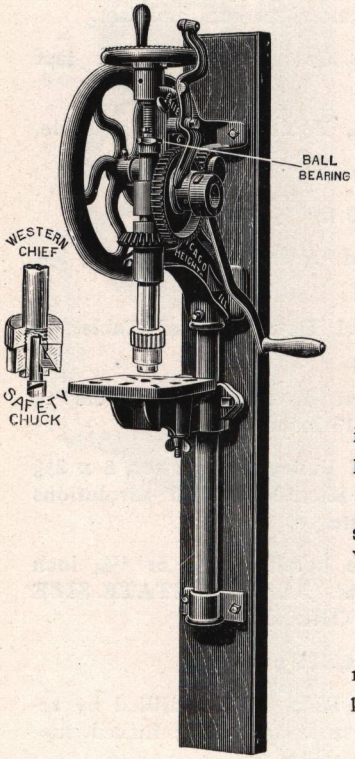
PRICE $14.50

Power Attachment, $2.00 net extra.

FOR LIST OF REPAIRS, SEE PAGE 156.

Western Chief Drill No. 3

NOT A CHEAP BABBITED AFFAIR, BUT A SUCCESSFUL SELF-FEED DRILL, BUILT ON MECHANICAL PRINCIPLES.



Automatic Self-feed.

Drills to center of 14½-inch Circle.

Bores 0 to 1 inch.

Up and Down run of Spindle, 3½ inches.

Up and Down run of Table, 11 inches.

Greatest distance from Table to Spindle, 10½ inches.

Size of Pulleys for Power, 8 x 2⅛ inches. Should run 200 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, 95 pounds.

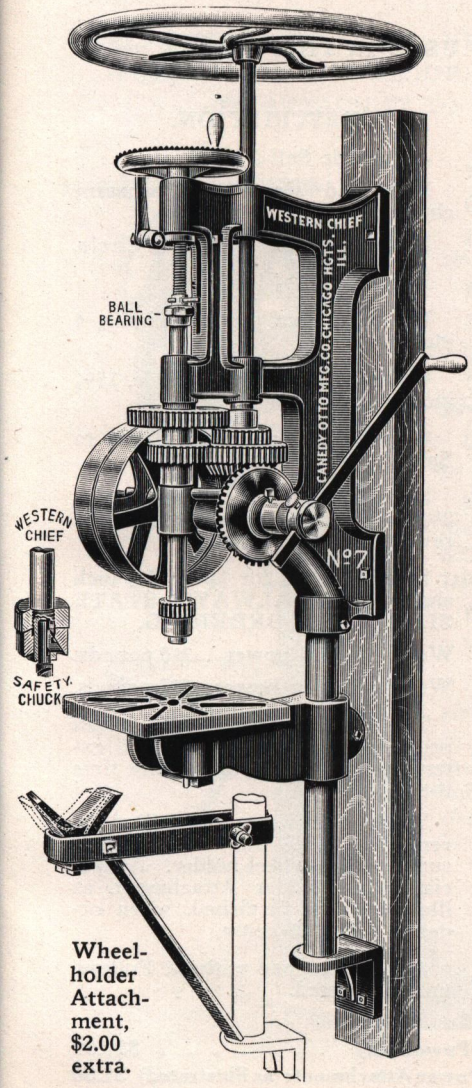
Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

PRICE $10.00

Power Attachment, $2.00 net extra.

FOR LIST OF REPAIRS, SEE PAGE 158.

Western Chief Drill No. 7



Wheel-holder Attachment, $2.00 extra.

CUT GEARS ONLY USED IN THIS DRILL.

DESCRIPTION.

Automatic Self-feed.

Fast and slow speed, instant change.

Drills to center of 21-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 5 inches.

Up and Down run of Table, 16½ inches.

Greatest distance from Table to Spindle, 19½ inches.

Size of Pulleys for Power, 10¾ x 2½ inches. Should run 175 to 180 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

WEIGHT.

Hand Power ....275 pounds.
Pulley Power ...295 pounds.

The shaft on this drill (when ordered hand power) is left extended to receive pulleys any time thereafter.

Wheel Rims can be drilled by removing table and using the forked support as a wheel holder. A Special Wheel-holder Attachment, as illustrated, is furnished, when ordered, for $2.00 extra.

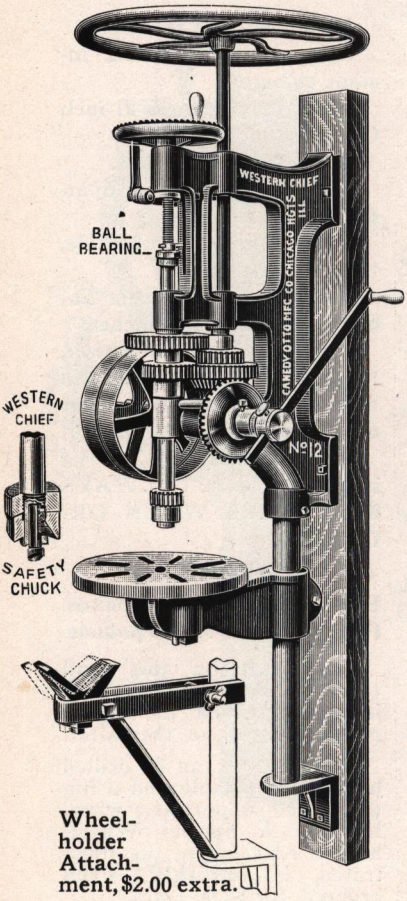
Always shipped without pulleys, unless ordered.

PRICE { **Without Pulleys, Hand Power only . . $33.50**
With Pulleys (as illustrated) 37.50

FOR LIST OF REPAIRS, SEE PAGE 162.

Western Chief Drill No. 12

CUT GEARS ONLY USED IN THIS DRILL.



Wheel-holder Attachment, $2.00 extra.

DESCRIPTION.

Automatic Self-feed.

Fast and slow speed, instant change.

Drills to center of 16-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 4 inches.

Up and Down run of Table, 15½ inches.

Greatest distance from Table to Spindle, 16 inches.

Size of Pulleys for Power, 10¾ x 2½ inches. Should run 175 to 180 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, Hand power . . 215 pounds.

Weight, Pulley power . . 235 pounds.

The shaft on this drill (when ordered hand power) is left extended to receive pulleys any time thereafter.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder. A Special Wheel-holder Attachment, as illustrated, as furnished, when ordered, for $2.00 extra.

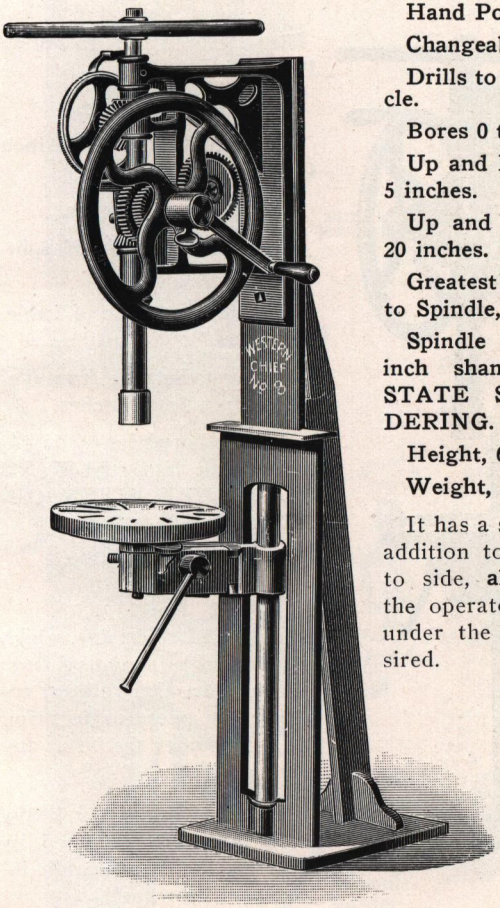
Always shipped without Pulleys, unless ordered.

PRICE { Without Pulleys, Hand Power only $27.50
With Hand and Pulley Power Attachments (as illustrated) 31.50

FOR LIST OF REPAIRS, SEE PAGE 162.

Western Chief Drill No. 8

A SELF-FEED HAND DRILL, DESIGNED FOR USE ANYWHERE UPON THE FLOOR; NO POST OR WALL TO ATTACH IT TO NECESSARY.



Hand Power only.

Changeable Self-feed.

Drills to center of 23-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 5 inches.

Up and Down run of Table, 20 inches.

Greatest distance from Table to Spindle, 18 inches.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Height, 60 inches.

Weight, 380 pounds.

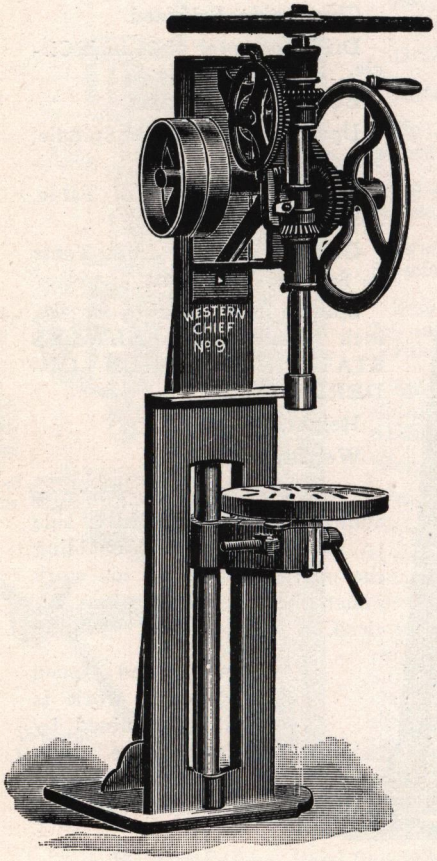
It has a slotted table which, in addition to swinging from side to side, **also rotates,** enabling the operator to bring his work under the bit at any place desired.

A second speed for heavy work is readily obtained by inserting the crank handle into rim of fly-wheel.

PRICE $30.00

Western Chief Drill No. 9

COMBINED HAND AND POWER SELF-FEED FLOOR DRILL.



Both Hand and Pulley Power.

Changeable Self-feed.

Drills to Center of 23-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 5 inches.

Up and Down run of Table, 20 inches.

Greatest distance from Table to Spindle, 18 inches.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Height, 60 inches.

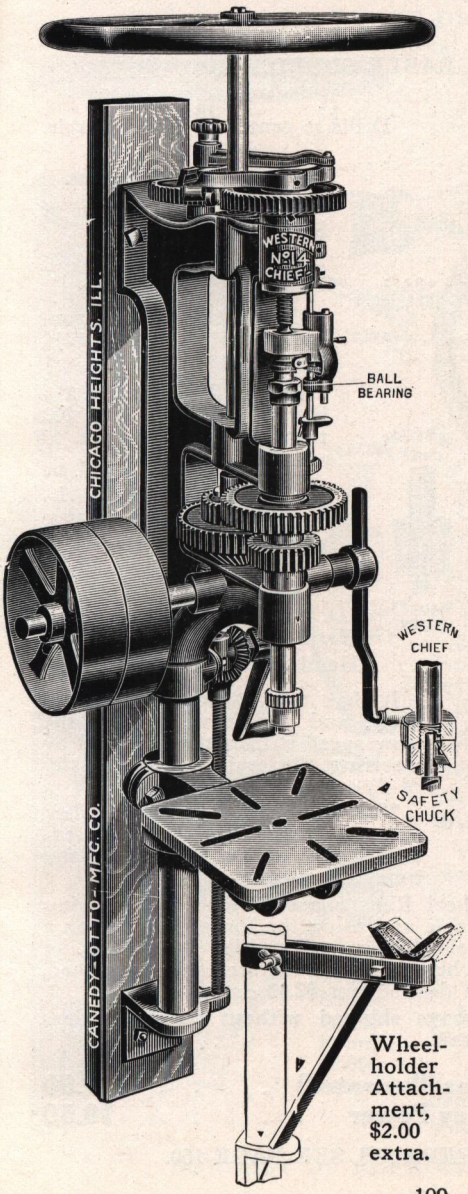
Weight, 390 pounds.

It has a slotted table, which in addition to swinging from side to side, **also rotates,** enabling the operator to bring his work under the bit at any place desired.

A second speed for heavy work is readily obtained by inserting the crank handle into rim of fly-wheel.

PRICE $35.00

Western Chief Drill No. 14



Wheel-holder Attachment, $2.00 extra.

DESCRIPTION.

Straight and Bevel Gears are Cut. Fast and slow speed, instant change. Horizontal, gear-driven, positive, self-feed, changeable instantly to fast, slow or medium, as desired. Raise and lower device to table.

It has automatic quick return, allowing rapid withdrawal of the bit at will, without *stopping or reversing* machine. Or, it can be set to drill any depth desired and will *automatically* (whether running by power or hand) reverse itself, withdraw the bit and start drilling again and again indefinitely, all without stopping the motion of the machine, or turning it backward. This feature is independent of Drill, and need not be used unless desired.

Drills to center of 21-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 4 inches.

Up and Down run of Table, 16½ inches.

Greatest distance from Table to Spindle, 18 inches.

Size of Pulleys, 10¾ x 2½ inches. Should run 175 to 180 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, Hand Power, 295 lbs.

Weight, Hand and Power .....315 lbs.

Wheel Rims can be drilled by removing table and using the forked support as a wheel holder. A special Wheel-holder Attachment, as illustrated, is furnished, when ordered, for $2.00 extra.

The Shaft on this Drill (when ordered Hand Power) is left extended to receive pulleys at any time thereafter.

Always shipped without pulleys, unless ordered.

PRICE

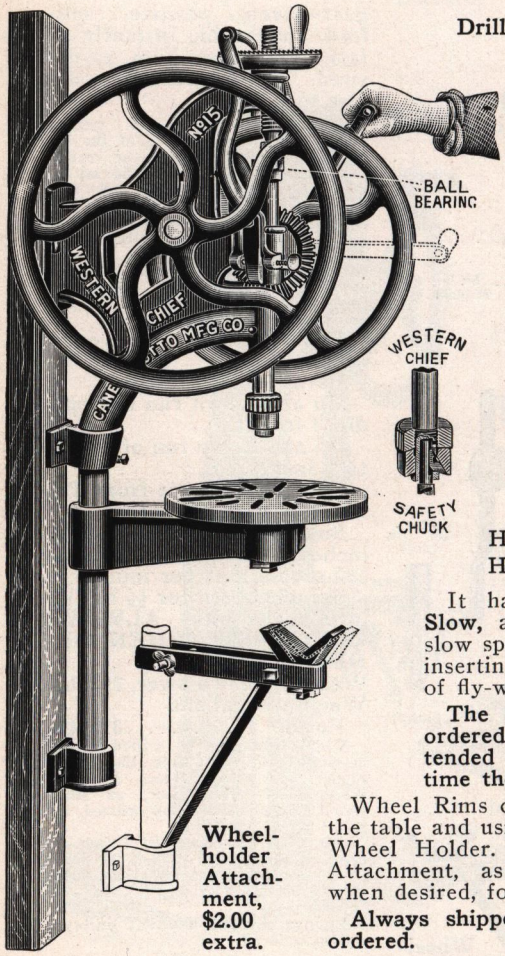
Hand Power only . . . $38.50

Both Hand Power and Pulley Power (as illustrated) . 42.50

FOR LIST OF REPAIRS, SEE PAGE 164.

Western Chief Drill No. 15

SPUR GEARS ARE CUT. BACK GEARED. SELF-FEED.
CHANGEABLE SPEED.



Wheel-holder Attachment, $2.00 extra.

Drills to center of 19-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 4 inches.

Up and Down run of Table, 11¾ inches.

Greatest distance from Table to Spindle, 13¼ inches.

Size of Pulleys, 8 x 2½ inches. Should run 200 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

WEIGHT.

Hand Power .....180 lbs.
Hand and Power.....190 lbs.

It has two speeds, **Fast** and **Slow**, and for heavy drilling the slow speed is instantly obtained by inserting the crank handle in rim of fly-wheel.

The Shaft on this Drill (when ordered Hand Power) is left extended to receive Pulleys at any time thereafter.

Wheel Rims can be drilled by removing the table and using the forked support as a Wheel Holder. A special Wheel-holding Attachment, as illustrated, is furnished, when desired, for **$2.00** extra.

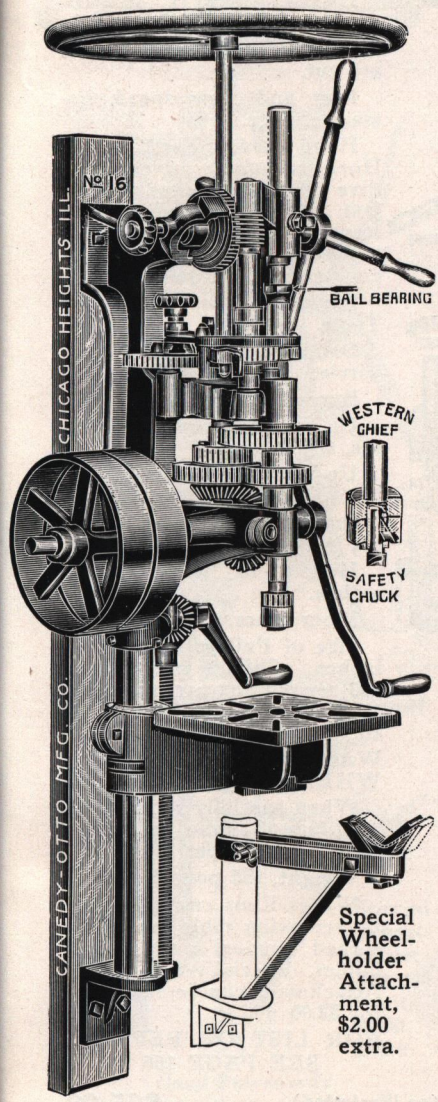
Always shipped without pulleys, unless ordered.

PRICE { **Hand Power (as illustrated) $17.50**
Hand and Pulley Power 19.50

FOR LIST OF REPAIRS, SEE PAGE 160.

Western Chief Drill No. 16

LARGEST POST DRILL MADE.



Special Wheel-holder Attachment, $2.00 extra.

A POST DRILL WITH THE FINE FEATURES OF MACHINE SHOP FLOOR DRILLS.

Straight and Bevel Gears are cut.

Fast and slow speed, instant change.

Hand Lever Feed, also Horizontal Gear-driven Positive Self-feed, changed to fast, slow or medium speed instantly. These feeds work independently of each other, and bit is lifted quickly.

Raise and lower device to Table.

Drills to center of 24-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 6¼ inches.

Up and Down run of Table, 15½ inches.

Greatest distance from Table to Spindle, 18½ inches.

Size of Pulleys, 10¾ x 2½ inches. Should run 175 to 180 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, Hand Power....340 lbs.

Weight, Hand and Power.360 lbs.

Wheel Rims can be drilled by removing table and using the forked support as a wheel holder.

When ordered hand power only, the shaft is left extended, so that Pulleys may be placed at any time.

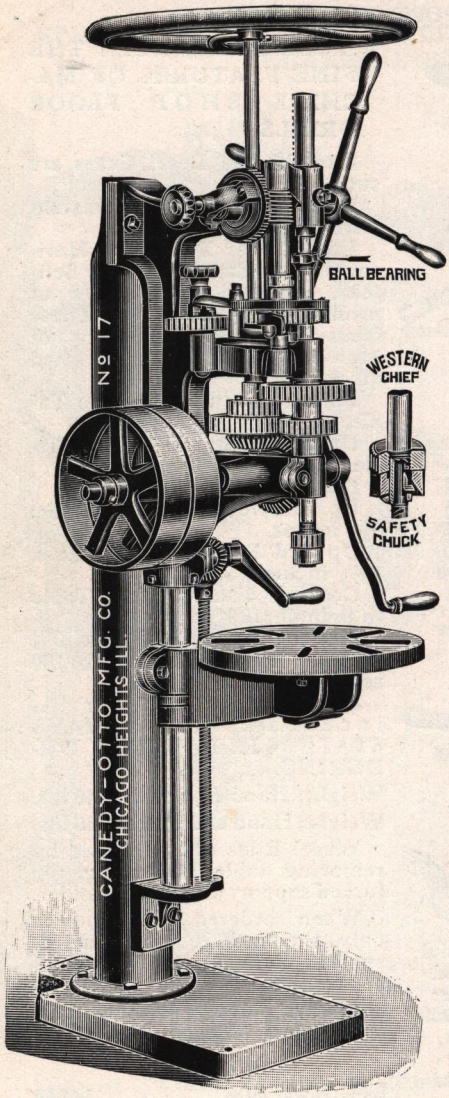
Always shipped without Pulleys, unless ordered.

PRICE.

Hand Power only . . .	**$42.50**
With Pulleys (as illustrated)	**46.50**

FOR LIST OF REPAIRS, SEE PAGE 166.

Western Chief Drill No. 17



A FINISHED FLOOR DRILL, BOTH HAND AND PULLEY POWER.

Straight and Bevel Gears are cut.

Fast and slow speed, instant change.

Hand Lever Feed, also Horizontal Gear-driven Positive Self-feed, changed to fast, slow or medium instantly. These feeds work independently of each other, and bit is lifted quickly.

Raise and lower device to Table.

Drills to center of 24-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 6¼ inches.

Up and Down run of Table, 15½ inches.

Greatest distance from Table to Spindle, 18½ inches.

Height of Machine, 71 inches.

Floor space, 15 x 26 inches.

Size of Pulleys, 10¾ x 2½ inches. Should run 175 to 180 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

When specially ordered we will bore Spindle to receive No. 3 Morse taper.

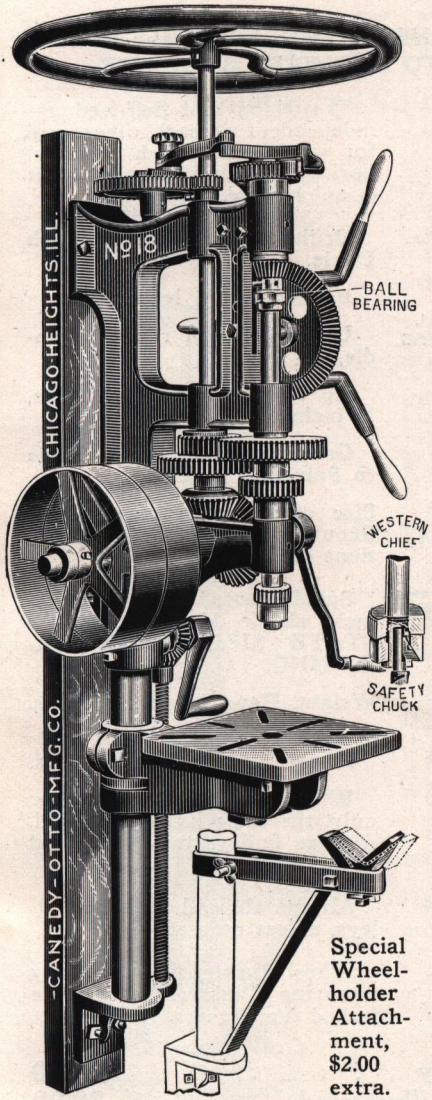
Weight, 535 pounds.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder. Special Wheel-holder Attachment can be furnished for $2.00 net.

FOR LIST OF REPAIRS, SEE PAGE 166

PRICE, Hand and Pulley Power (as illustrated) . . $65.00

Western Chief Drill No. 18



Special Wheel-holder Attachment, $2.00 extra.

DESCRIPTION.

Spindle is equipped with Ball Bearings.

Straight and Bevel Gears are cut.

Fast and Slow speed, instant change.

Horizontal Positive Gear-driven Self-feed, changeable instantly to fast, slow or medium, as desired.

Hand Lever Feed, working independent of Self-feed; the most powerful of any post drill on the market. Permits a quick lift or return of Spindle, an excellent feature for wood-boring.

Raise and lower device to Table.

Drills to center of 21-inch Circle.

Bores 0 to 1½ inches.

Up and Down run of Spindle, 5½ inches.

Up and Down run of Table, 16½ inches.

Greatest distance from Table to Spindle, 18 inches.

Size of Pulleys, 10¾ x 2½ inches. Should run 175 to 180 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, Hand Power . 300 lbs.

Weight, Hand and Power . . . . . 320 lbs.

Wheel Rims can be drilled by removing table and using forked support as a wheel holder.

When ordering hand power only, shaft is left extended so that pulleys may be placed at any time.

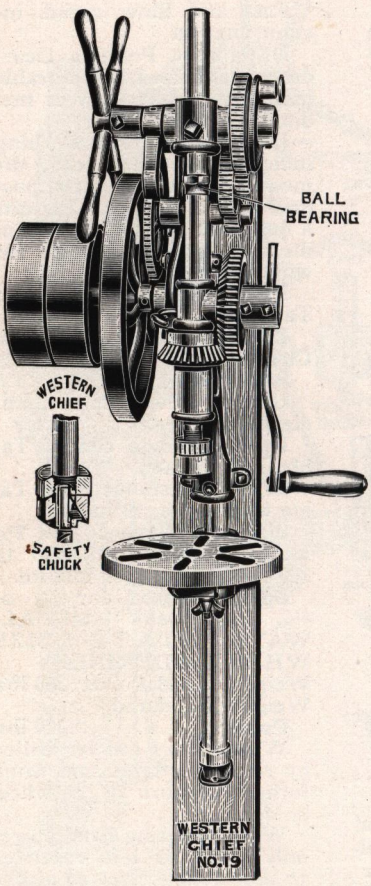
Always shipped without pulleys, unless ordered.

FOR LIST OF REPAIRS, SEE PAGE 168

PRICE { Hand Power only $40.50
With Pulleys (as illustrated) 44.50

Western Chief Drill No. 19

A LOW-PRICED COMBINED HAND AND SELF-FEED DRILL. ADAPTED TO ORDINARY SHOP USE.



The Hand and Self-feed are independent of each other, and for quick work, such as wood boring, it is unsurpassed, as bit is quick-lifted.

Drills to Center of 16½-inch Circle.

Bores 0 to 1¼ inch.

Up and Down run of Spindle, 5½ inches.

Up and Down run of Table, 11 inches.

Greatest distance from Table to Spindle, 14 inches.

Size of Pulleys, 8 x 2 inches. Should run 190 to 200 revolutions per minute.

Spindle bored for ½ or 41/64 inch shank bits. ALWAYS STATE SIZE WHEN ORDERING.

Weight, Hand Power....130 lbs.

Weight, Hand and Power .....140 lbs.

When ordered hand power only, the shaft is left extended, so that Pulleys may be placed at any time.

Always shipped without Pulleys, unless ordered.

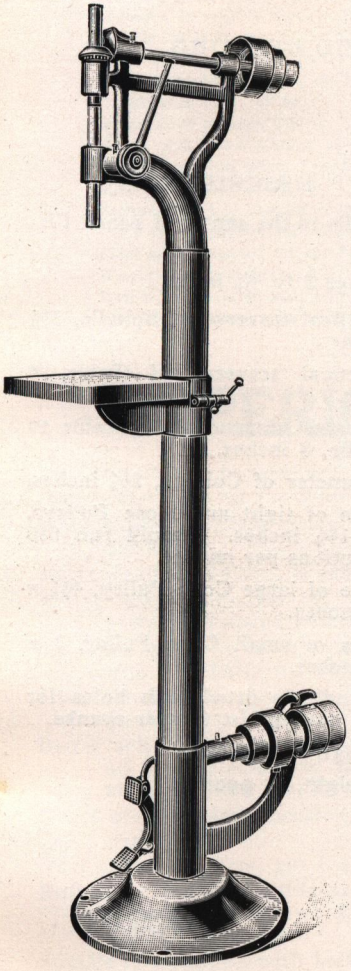
Wheel Rims can be drilled by removing Table and using the forked support as a Holder.

PRICE { **Hand Power only $18.00**
With Pulleys (as illustrated) 20.00

FOR LIST OF REPAIRS, SEE PAGE 170.

Western Chief Sensitive Floor Drill No. 27

FOR LIGHT AND RAPID DRILLING.



DESCRIPTION.

Drills to center of 12-inch Circle.

Bores 0 to $^{19}/_{32}$ inch.

Vertical traverse of Spindle, 3¼ inches.

Vertical traverse of Table, 2 feet 8½ inches.

Greatest distance from Table to Spindle, 2 feet 9¾ inches.

Diameter of Column, 3½ inches.

Size of tight and loose Pulley, 4 x 1¾ inches.

Size of large Cone Pulley, 4½ x 1⅝ inches.

Size of middle Cone Pulley, 3¼ x 1⅝ inches.

Size of small Cone Pulley, 2 x 1⅝ inches.

Spindle is fitted with holes for drills having No. 1 taper shanks.

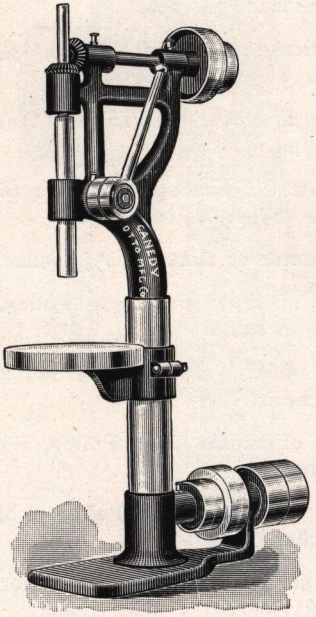
Height, 66 inches.

Weight, 150 pounds.

PRICE $58.00

Western Chief Sensitive Bench Drill No. 28

FOR LIGHT AND RAPID DRILLING.



DESCRIPTION.

Drills to the center of 9-inch Circle.

Bores 0 to 9/16 inch.

Vertical traverse of Spindle, 3¼ inches.

Vertical traverse of Table, 8 inches.

Greatest distance from Table to Spindle, 8 inches.

Diameter of Column, 2½ inches.

Size of tight and loose Pulleys, 4 x 1⅝ inches. Should run 650 revolutions per minute.

Size of large Cone Pulley, 4⅜ x 1½ inches.

Size of small Cone Pulley, 3 x 1½ inches.

Spindle is fitted with holes for drills having No. 1 taper shanks.

Height, 32 inches.

Weight, 70 pounds.

PRICE $25.00

Description of Nos. 30 and 31 Drills

For Illustration, see pages 118, 119 and 120.

Height of Drill, 67 inches.
Greatest distance between round base and spindle, 42½ in.
Greatest distance between square base and spindle, 41 in.
Greatest distance between table and spindle, 29 in.
Travel of spindle, 9 in.
Diameter of spindle in sleeve, $1\frac{5}{16}$ in.
Diameter of spindle above sleeve, 1¼ in.
Spindle bored to receive No. 3 Morse taper.
Feeds of bit per revolution of spindle, .005, .015, .030 in.
Drills to center of 21-in. circle.
Diameter of table, 16 in.
Diameter of column, 5⅝ in.
Travel of table on column, 18½ in.
Diameter of spur gears, $7\frac{7}{16}$, 5⅞, 4⅝ and 3 in.
Size of pulleys, 8 x 2½ in.
Pulleys should be speeded to run about 425 revolutions per minute.
Floor space required for round base, 28 x 20 in.
Floor space required for square base, 38 x 15 in.
Weight, net, round base, 570 lbs.
Weight, net, square base, 660 lbs.
Add for machine crated, about 50 lbs.

SUPERIOR POINTS

No cone pulleys to wear out belts.

No countershaft on the floor to gather up dirt and wear out.

More power, because gears substitute cone pulleys and **gears do not slip.**

More wearing surface, because bearings are larger.

Better adapted to use of "high-speed" bits, because of greater power and speed combined.

No loose gears on shaft to run idle and wear out. All gears turn with the shafts, insuring a true-running and long-lasting gear.

Four changes of speed by shifting gears; more convenient and quicker than shifting a belt.

Better self-feed, because independent of lever feed; built strong; no loose joints, and has automatic stop. **(Self-feed Automatic Stop on No. 31 only.)**

Gears are noiseless, because cut by modern methods and special tools.

No clutches to wear, get loose and fail to work.

Both table and supporting arm can be clamped tight in position by use of clamp screws with lever handles, thus avoiding use of separate wrenches.

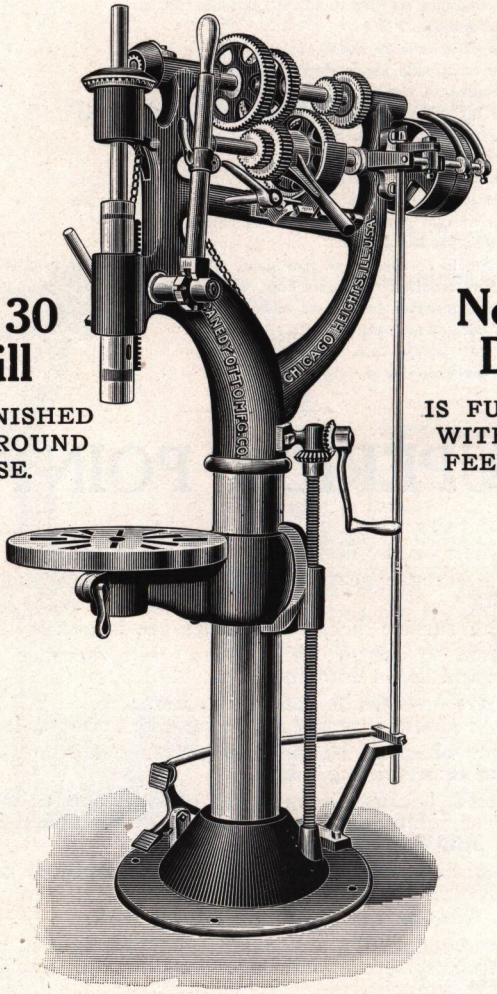
Spindle is equipped with ball bearings.

More power and speed combined than any 20-inch drill on the market.

Canedy-Otto
20-inch Upright Drill No. 30

No. 30 Drill

IS FURNISHED WITH ROUND BASE.

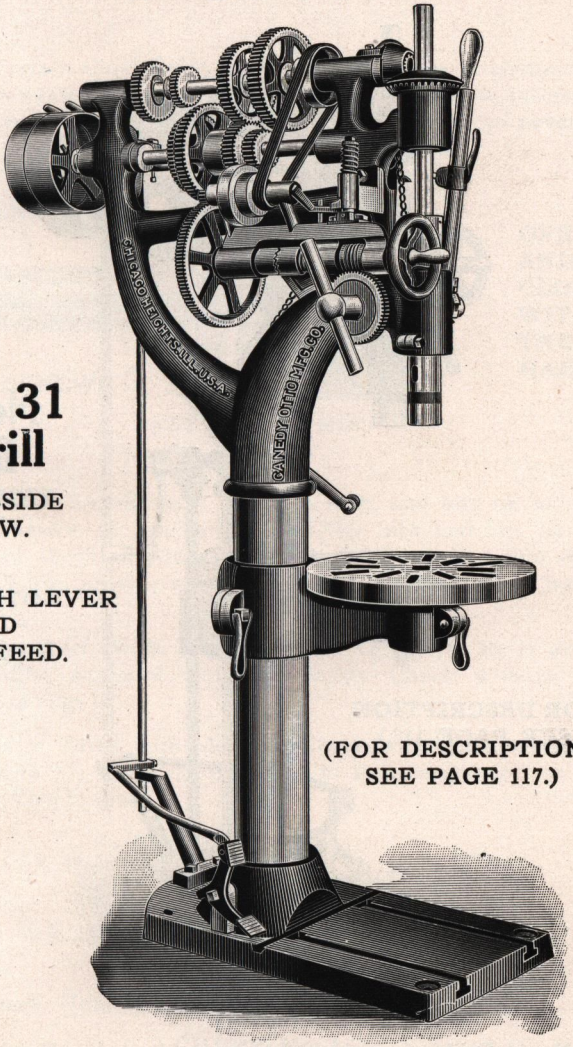


No. 30 Drill

IS FURNISHED WITH LEVER FEED ONLY.

(FOR DESCRIPTION, SEE PAGE 117.)

Canedy-Otto 20-inch Upright Drill No. 31



No. 31 Drill

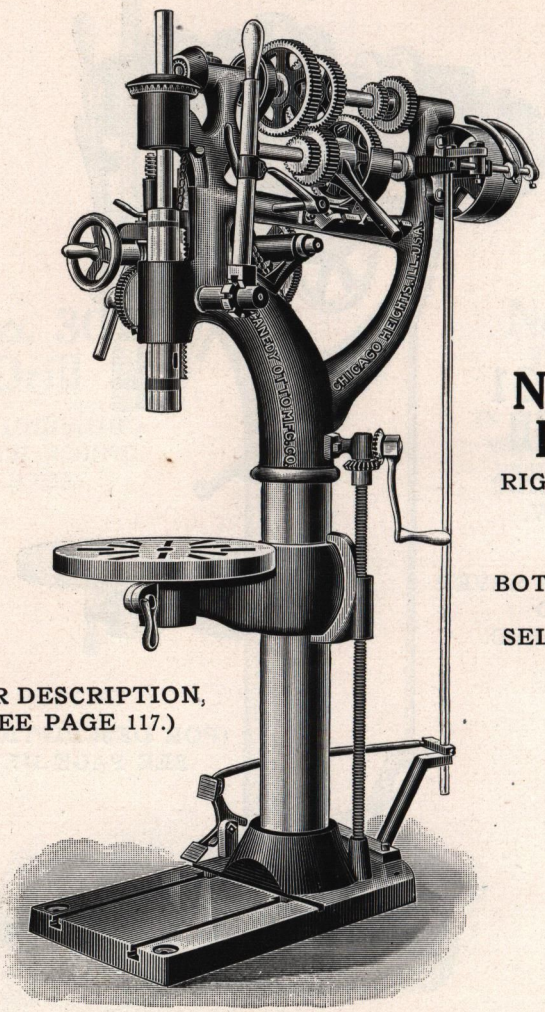
LEFT-SIDE VIEW.

HAS BOTH LEVER AND SELF-FEED.

(FOR DESCRIPTION, SEE PAGE 117.)

All Gearing has proper shield guards to prevent injury to operator, though not shown in illustrations.

Canedy-Otto 20-inch Upright Drill No. 31



No. 31 Drill
RIGHT SIDE VIEW.

HAS BOTH LEVER AND SELF-FEED.

(FOR DESCRIPTION, SEE PAGE 117.)

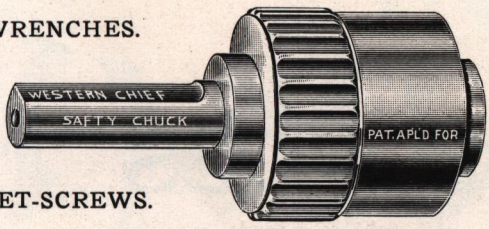
No. 31 Drill is furnished with Square Base, has Hand-lever Feed, also Power Self-feed with Automatic Stop.

Brown-Wales Co.

Western Chief Safety Drill Chucks Nos. 1, 2, 3 and 4

The Western Chief Safety Chuck is so made as to eliminate the use of set-screws, keys or wrench. Drill bits can be inserted or removed in an instant, and when bit is in chuck it can **never slip.**

NO WRENCHES.



NO SET-SCREWS.

OPENED AND CLOSED WITH THE HAND.

(CUT ONE-HALF SIZE.)

When Drill Spindles are bored ½ inch, and bits on hand are 41/64-inch shank — or spindle is bored 41/64 inch and bits on hand have ½-inch shank, or you have bits on hand with both size shanks — these Chucks provide a way out of the trouble. See Chucks 1 and 2.

Western Chief Drills, Nos. 1, 2, 3, 7, 12, 14, 15, 16, 17 and 18, have Spindles equipped with our Safety Chuck without extra charge. See page 97.

Owners of Drills with old-style Chuck with set-screw can be supplied with W. C. Safety Chuck to fit hole in mandrel on their drill. See Chucks 3 and 4.

CHUCK No. 1.

Arbor ½ inch, Hole 41/64 inch..... **$3.00**

CHUCK No. 2.

Arbor 41/64 inch, Hole ½ inch..... **$3.00**

CHUCK No. 3.

Arbor ½ inch, Hole ½ inch..... **$3.00**

CHUCK No. 4.

Arbor 41/64 inch, Hole 41/64 inch..... **$3.00**

REPAIRS

FOR

FORGES

BLOWERS

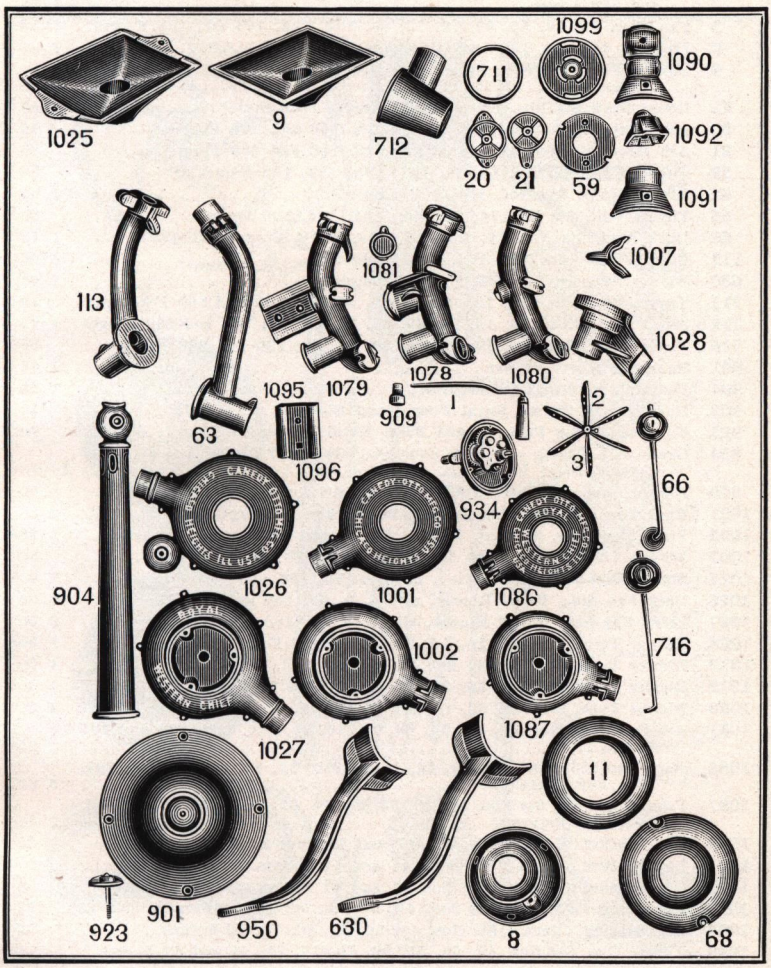
AND

DRILLS

will be found in following pages.

See back of each illustration for Number, Description and Price.

Royal Forges and Blowers



Repair List of Royal Forges and Blowers

When Ordering, State Number and Name of Part Wanted.

No.	Name of Part.	Price.
1	Crank Handle, all Forges and Blowers	$ 0 90
2	Fan, fits Royal Blower, also Nos. 8, 9, 10, 15, 20, 30, 35, 99, 100 and 200 Forges	1 75
3	Fan, Nos. 40, 50, 55, 60, 70, 75, 80, 102, 103, 104 and 105 Forges.	1 50
8	Fire-pot, fits Nos. 100 and 200 Forges (Old Style)	1 00
9	Square Fire-pot (New Style), fits Nos. 8, 9, 10, 15, 20, 30 and 35 Forges	4 00
11	Goose Nest, fits Nos. 100 and 200 Forges (Old Style)	1 50
20	Ash Door, fits Nos. 10, 15, 20, 30, 35, 100 and 200 Forges	25
21	Ash Door, fits Nos. 10, 15, 20, 30, 35, 100 and 200 Forges	25
59	Tuyere Cap, fits Nos. 36, 37, 102, 103, 104, 105 Forges	75
63	Blower Tube, fits Nos. 102, 103 Forges	4 00
66	Tuyere Ball, fits Nos. 36, 37, 102, 103, 104, 105 Forges	50
68	Duck Nest, fits Nos. 36, 37, 102, 103, 103¼ Forges	1 75
113	Blower Tube, fits Nos. 104, 105 Forges	4 00
630	Blower Support, fits Nos. 8 and 9 Forges	2 00
711	Tuyere Ring, fits Nos. 10, 15, 20, 30, 35, 99, 100 and 200 Forges	40
712	Ash Pot, fits Nos. 10, 15, 20, 30, 35, 36, 37, 99, 100 and 200 Forges	1 25
716	Tuyere Ball, fits Nos. 10, 15, 20, 30, 35, 99, 100 and 200 Forges	50
901	Base, for Royal Blower	1 00
904	Pedestal, for Royal Blower	1 00
909	Handle Hub, fits all Royal Forges and Blowers	50
923	Nut, connecting Pedestal and Base, Royal Blower	20
934	Gears with Casing and Yoke complete, fits Royal Blower and all Royal Forges except No. 76	10 50
950	Blower Support, fits Nos. 99, 100 and 200 Forges	2 00
1001	Back Fan Side, fits Nos. 10, 15, 20, 30 and 35 Forges	3 00
1002	Front Fan Side, fits Nos. 10, 15, 20, 30 and 35 Forges	3 50
1007	Blower Tube Support, fits Nos. 10, 15, 20, 30 and 35 Forges	60
1025	Square Fire-pot (New Style), fits Nos. 99, 100 and 200 Forges	3 00
1026	Back Fan Side, Royal Blower, also 8, 9, 99, 100 and 200 Forges	3 00
1027	Front Fan Side, Royal Blower, also 8, 9, 99, 100 and 200 Forges	3 50
1028	Blower Tube, fits Nos. 10, 15, 20, 30 and 35 Forges	2 50
1078	Blower Tube, fits Nos. 41 and 61 Forges	4 00
1079	Blower Tube, fits Nos. 40, 50, 55, 60, 70 and 75 Forges	4 00
1080	Blower Tube, fits Nos. 80, 81 and 82 Forges	4 00
1081	Ash Door, fits Nos. 40, 50, 55, 60, 70, 75, 80, 102, 103, 104 and 105 Forges	25
1086	Back Fan Side, fits Nos. 40, 50, 55, 60, 70, 75, 80, 81, 82, 102, 103, 104, 105 Forges	3 00
1087	Front Fan Side, fits Nos. 40, 50, 55, 60, 70, 75, 80, 81, 82, 102, 103, 104, 105 Forges	3 50
1090	Leg Bracket (Long), fits Nos. 41 and 61 Forges	1 25
1091	Leg Bracket (Short), fits Nos. 41 and 61 Forges	1 00
1092	Leg Bracket (Inside), fits Nos. 41 and 61 Forges	50
1095	Leg Bracket (Front), fits Nos. 40, 50, 55, 60, 70, 75 Forges	75
1096	Leg Bracket (Back), fits Nos. 40, 50, 55, 60, 70, 75 Forges	75
1099	Tuyere Cap, fits Nos. 40, 50, 55, 60, 70, 75, 80, 81 and 82 Forges	75

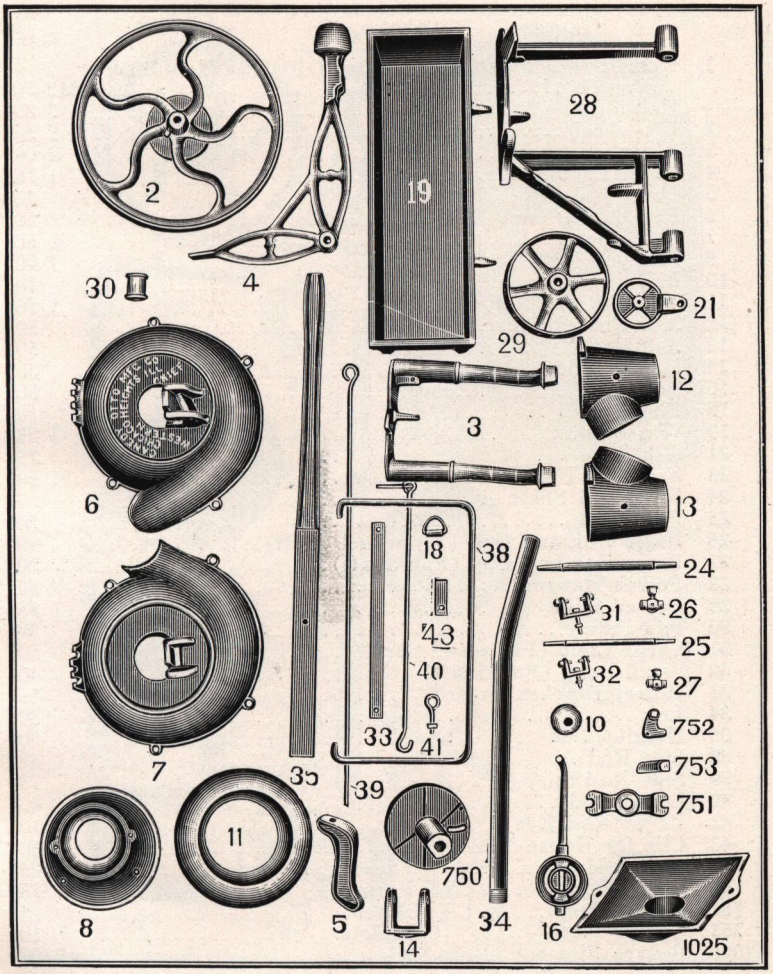
NOTE.— For General Forge parts of Forges Nos. 8 and 9, see repairs for BB and XBB Forges.

For general Forge parts of Nos. 99, 100 and 200, see repairs for AA Forges.

For general Forge parts of Nos. 102 and 103, see repairs for Nos. 2 and 3 Forges.

Western Chief Forges

Nos. 1 and 1½



Repair List of Western Chief Forges Nos. 1 and 1½

When Ordering, Give Name of Forge and Number of Part Wanted.

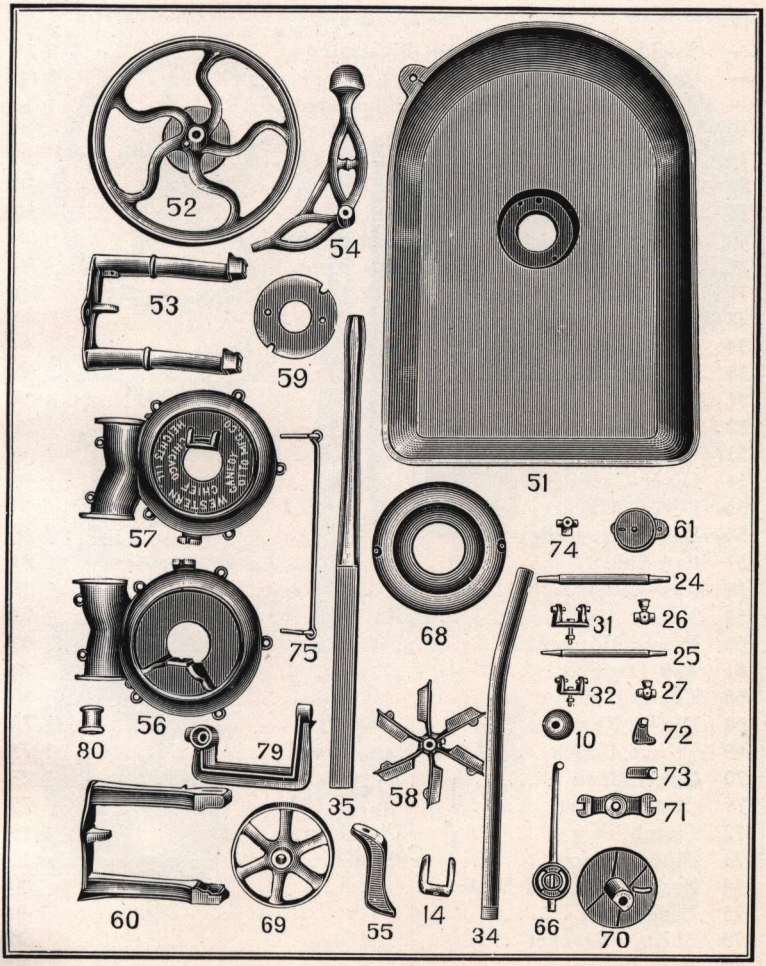
No.	Name of Part.	Price.
1	Hearth (not illustrated), state if for round or square fire-pot	$12 50
—	Hood (not illustrated)	3 25
2	Fly-wheel	2 50
3	Wheel Hanger	2 00
4	Lever Casting	1 75
5	Lever Bracket	35
6	Fan Side (Pulley Side)	2 50
7	Fan Side	2 50
8	Fire-pot (Old Style)	1 00
10	Ball	10
11	Goose Nest (Old Style)	1 50
12	Ash Pot, Right	50
13	Ash Pot, Left	50
14	Handle Loop	30
16	Tuyere Ball	50
18	Finger Pull	10
19	Water Tank	3 25
21	Ash Door	25
23	Fan (not illustrated)	1 50
24	Fly-wheel Shaft	50
25	Fan Shaft	50
26	Brass Box and Cup (Fly-wheel Shaft)	90
27	Brass Box and Cup (Fan Shaft)	80
28	Power Hanger	2 50
29	Power Pulley	1 75
30	Fan Pulley	30
31	Large Loop (Fly-wheel Shaft)	50
32	Small Loop (Fan Shaft)	40
33	Wheel Bracket Brace	15
34	Leg	30
35	Handle	50
38	Side Rod	35
39	Side Rod Support	25
40	Lever Rod	40
41	Lever Rod Eye	10
43	Clip for Goose Nest	10
750	Clutch Hub	1 25
751	Clutch Lever	75
752	Clutch Dog	15
753	Clutch Piece	10
1025	Square Fire-pot (New Style)	3 00

These Form Clutch Complete.

LONG BELTS, $1. PULL STRAPS, 40 CENTS EACH.

Western Chief Forges

Nos. 2, 3, 3¼ and 3½



Repair List of Western Chief Forges Nos. 2, 3, 3¼ and 3½

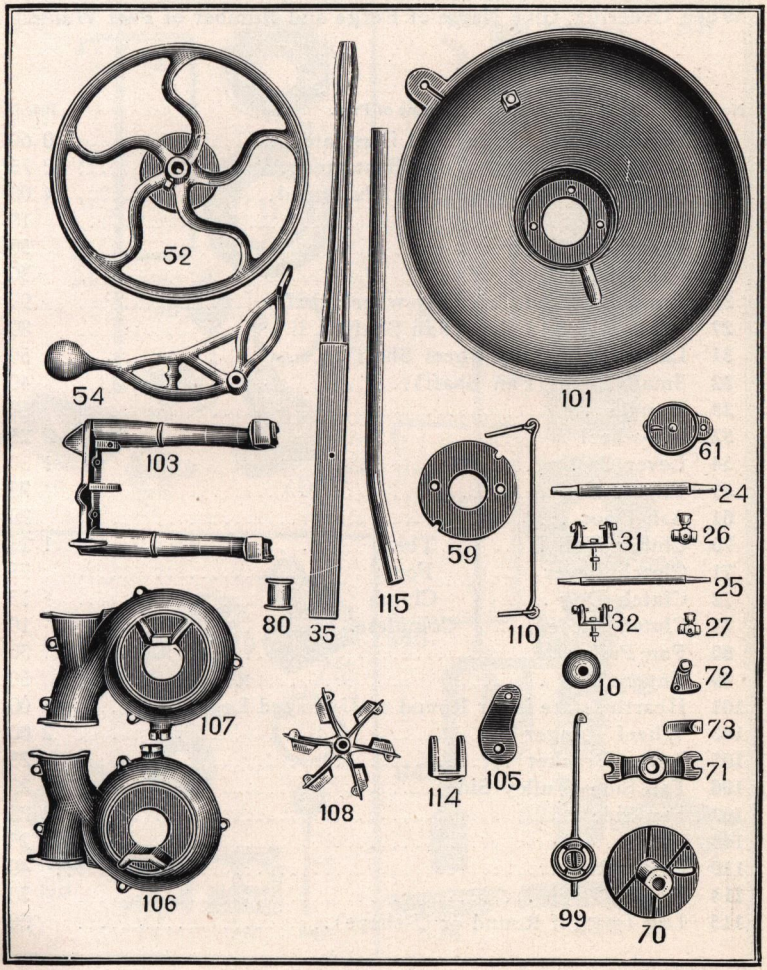
When Ordering, Give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Price.
—	Shield (No. 2 Forge), not illustrated	$ 0 75
—	Hood (Nos. 3 and 3½ Forge), not illustrated	3 00
—	Hood (No. 3¼ Forge), not illustrated	4 50
10	Ball	10
14	Handle Loop	30
24	Fly-wheel Shaft	50
25	Fan Shaft	50
26	Brass Box and Cup (Fly-wheel Shaft)	90
27	Brass Box and Cup (Fan Shaft	80
31	Large Loop (Fly-wheel Shaft)	50
32	Small Loop (Fan Shaft)	40
34	Leg	30
35	Handle	50
51	Hearth	6 00
52	Fly-wheel	2 25
53	Wheel Hanger	2 00
54	Lever Casting	1 50
55	Lever Bracket	30
56	Fan Side (Pulley Side)	2 25
57	Fan Side	2 25
58	Fan	1 25
59	Tuyere Cap	75
60	Power Hanger	2 00
61	Ash Door	20
66	Tuyere Ball	50
68	Ducks Nest	1 75
69	Power Pulley	1 75
70	Clutch Hub	1 25
71	Clutch Lever	75
72	Clutch Dog	15
73	Clutch Piece	10
	These Form Clutch Complete.	
74	Brass Box, Old Style	80
75	Lever Rod	40
79	Shifter Bracket	90
80	Fan Pulley	30

LONG BELTS, 75 Cents. PULL STRAPS, 40 CENTS EACH.

Western Chief Forges

Nos. 4, 5 and 5½



Repair List of Western Chief Forges Nos. 4, 5 and 5½

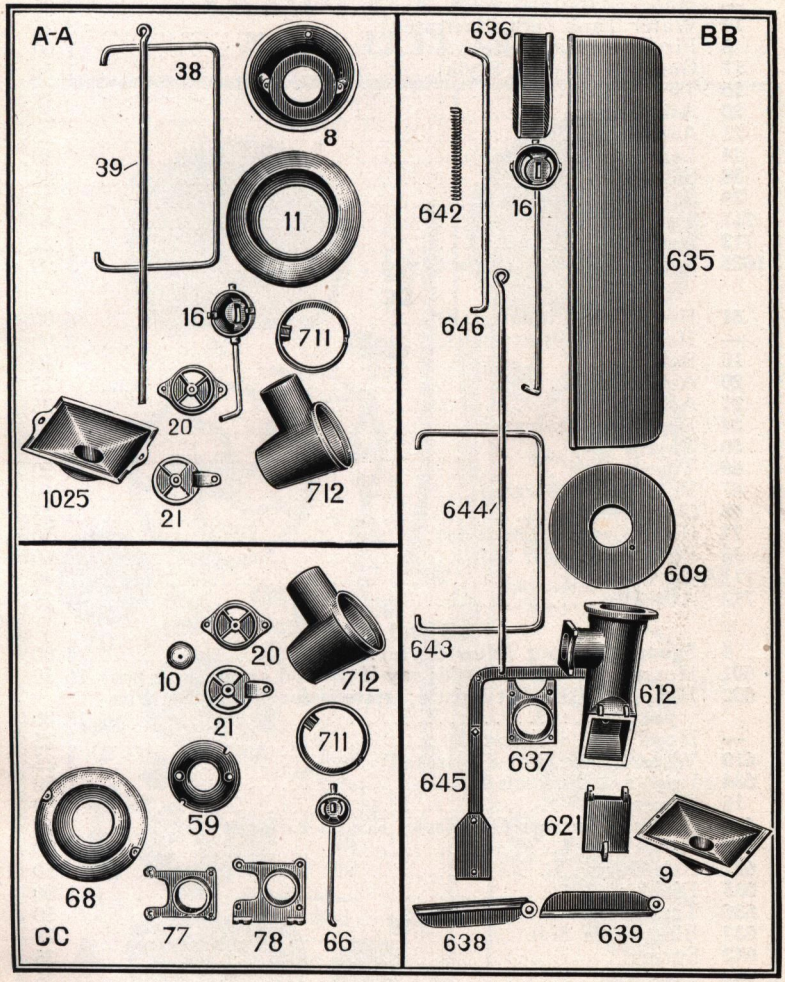
When Ordering, Give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Price.
—	Shield (No. 4 Forge), not illustrated	$ 0 60
—	Hood (No. 5 Forge), not illustrated	2 75
—	Hood (No. 5½ Forge), not illustrated	4 00
10	Ball	10
24	Fly-wheel Shaft	50
25	Fan Shaft	50
26	Brass Box and Cup (Fly-wheel Shaft)	90
27	Brass Box and Cup (Fan Shaft)	80
31	Large Loop (Fly-wheel Shaft)	50
32	Small Loop (Fan Shaft)	40
35	Handle	50
52	Fly-wheel	2 25
54	Lever Casting	1 50
59	Tuyere Cap	75
61	Ash Door	20
70	Clutch Hub — These Form Clutch Complete.	1 25
71	Clutch Lever — These Form Clutch Complete.	75
72	Clutch Dog — These Form Clutch Complete.	15
73	Clutch Piece — These Form Clutch Complete.	10
80	Fan Pulley	30
99	Tuyere Ball	50
101	Hearth (state if for Round or U-shaped Legs)	5 00
103	Wheel Hanger	2 00
105	Lever Bracket	25
106	Fan Side (Pulley Side)	2 25
107	Fan Side	2 25
108	Fan	1 25
110	Lever Rod	40
114	Handle Loop	30
115	Leg (state if Round or U-shape)	30

LONG BELTS, 75 Cents. PULL STRAPS, 40 CENTS EACH.

Western Chief Forges

Sizes AA, BB, XBB and CC



Repair List of Western Chief Forges
Sizes AA, BB, XBB and CC

When Ordering, Give Name of Forge and Number of Part Wanted.

AA

No.	Name of Part.	Price.
1	Hearth (not illust'd; state if for R'd or Sq. Fire-pot)	$12 50
—	Hood (not illustrated)	3 25
19	Water Tank (not illustrated)	3 25
8	Fire-pot (Old Style)	1 00
11	Goose Nest (Old Style)	1 50
16	Tuyere Ball	50
20	Ash Door	25
21	Ash Door	25
34	Leg (not illustrated)	30
38	Side Rod	35
39	Side Rod Support	25
711	Tuyere Ring	40
712	Ash Pot	1 25
1025	Square Fire-pot (New Style)	3 00

CC

51	Hearth (not illustrated)	6 00
—	Hood (not illustrated)	3 00
10	Ball	10
20	Ash Door	25
21	Ash Door	25
34	Leg (not illustrated)	30
59	Tuyere Cap	75
66	Tuyere Ball	50
67	Pipe (not illustrated)	60
68	Duck Nest	1 75
77	Blast Gate, Right Side	50
78	Blast Gate, Left Side	60
711	Tuyere Ring	40
712	Ash Pot	1 25

BB and XBB

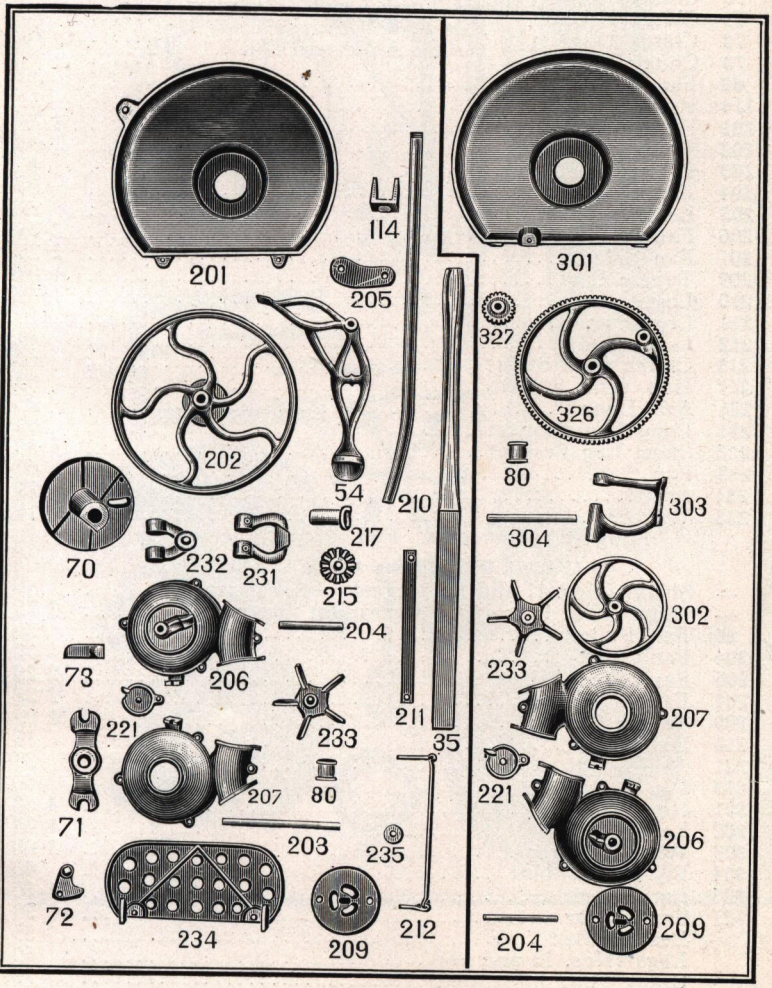
9	Square Fire-pot (New Style)	4 00
601	Hearth, BB (not illust'd; say if for R'd or Sq. Fire-pot)	16 50
602	Hearth, XBB (not illust'd; state if for R'd or Sq. Fire-pot)	18 00
—	Hood (not illustrated)	3 25
619	Water Tank (not illustrated)	3 25
634	Leg (not illustrated)	1 50
16	Tuyere Ball	50
609	Tuyere Cap (for Old Style, Round Fire-pot)	1 50
612	Ash Pot	3 00
621	Ash Door	50
635	Divider	1 00
636	Tank Support	50
637	Blast Gate Side	75
642	Spring	35
643	Side Rod	35
644	Side Rod Support	25
645	Damper	1 00
646	Ash Door Rod	40

Hero Forges

Nos. 6 and 7

Leader Forges

Nos. 11, 12, 13 and 14



Repair List of Hero Forges Nos. 6 and 7, Leader Forges Nos. 11, 12, 13 and 14

When Ordering, Give Name of Forge and Number of Part Wanted.

HERO FORGES Nos. 6 AND 7

No.	Name of Part.	Price.
—	Shield (No. 6 Forge), not illustrated	$ 0 60
—	Hood (No. 7 Forge), not illustrated	2 75
35	Handle	50
54	Lever Casting	1 50
70	Clutch Hub	1 25
71	Clutch Lever	75
72	Clutch Dog	15
73	Clutch Piece	10
	These Form Clutch Complete New Style Same as Shown on No. 4 Western Chief.	
80	Fan Pulley	30
114	Handle Loop	30
201	Hearth	4 75
202	Fly-wheel	2 00
203	Fly-wheel Shaft	40
204	Fan Shaft	30
205	Lever Bracket	25
206	Fan Side (Pulley Side)	2 25
207	Fan Side	2 25
209	Tuyere Cap	1 00
210	Leg	30
211	Leg Brace	10
212	Lever Rod	40
215	Clutch (Old Style)	60
217	Hub (Old Style)	60
221	Ash Door	20
231	Long Leg Bracket	60
232	Short Leg Bracket	50
233	Fan	60
234	Shelf	75
235	Washer	10

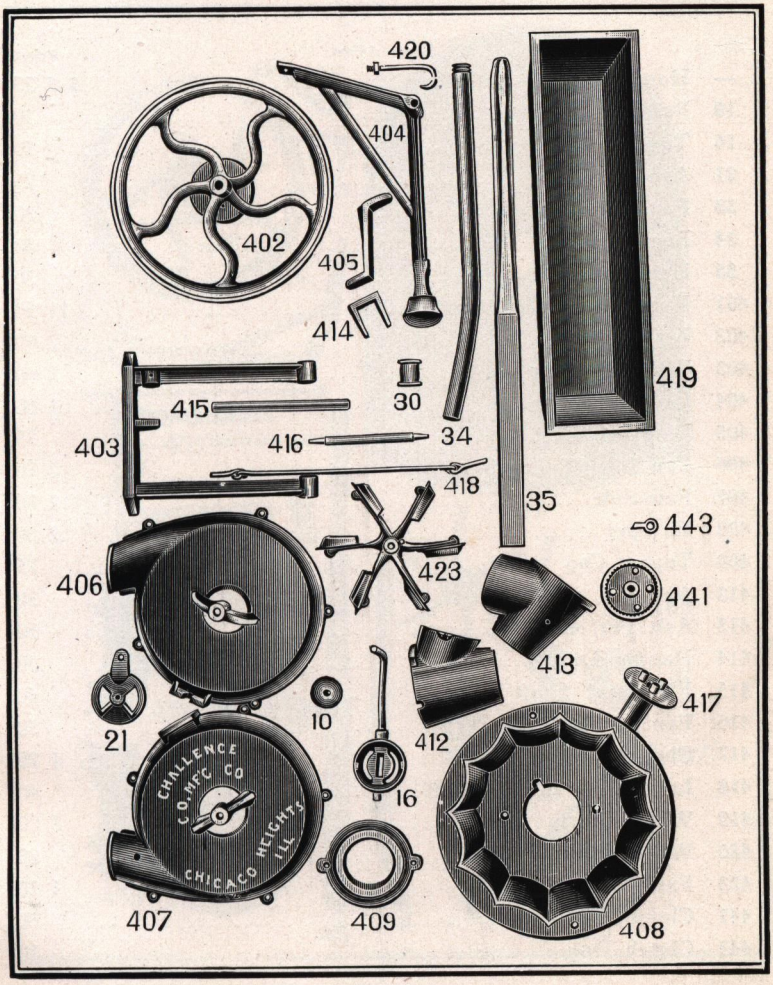
Long Belts, 60 cents. Pull Straps, 30 cents each.

LEADER FORGES Nos. 11, 12, 13 AND 14

—	Shield (Nos. 11 and 13 Forges), not illustrated	60
—	Hood (Nos. 12 and 14 Forges), not illustrated	2 75
80	Fan Pulley	30
204	Fan Shaft	30
206	Fan Side (Pulley Side)	2 25
207	Fan Side	2 25
209	Tuyere Cap	1 00
210	Leg	30
221	Ash Door	20
233	Fan	60
301	Hearth	4 50
302	Large Pulley	1 00
303	Wheel Hanger	1 00
304	Fly-wheel Shaft	40
326	Large Gear	1 50
327	Small Gear	30
	Leather Belt	35
	Legs (Nos. 13 and 14)	50
	Crank (not illustrated)	75

Challenge Forge

No. 1c



Repair List of Challenge Forge No. 1c

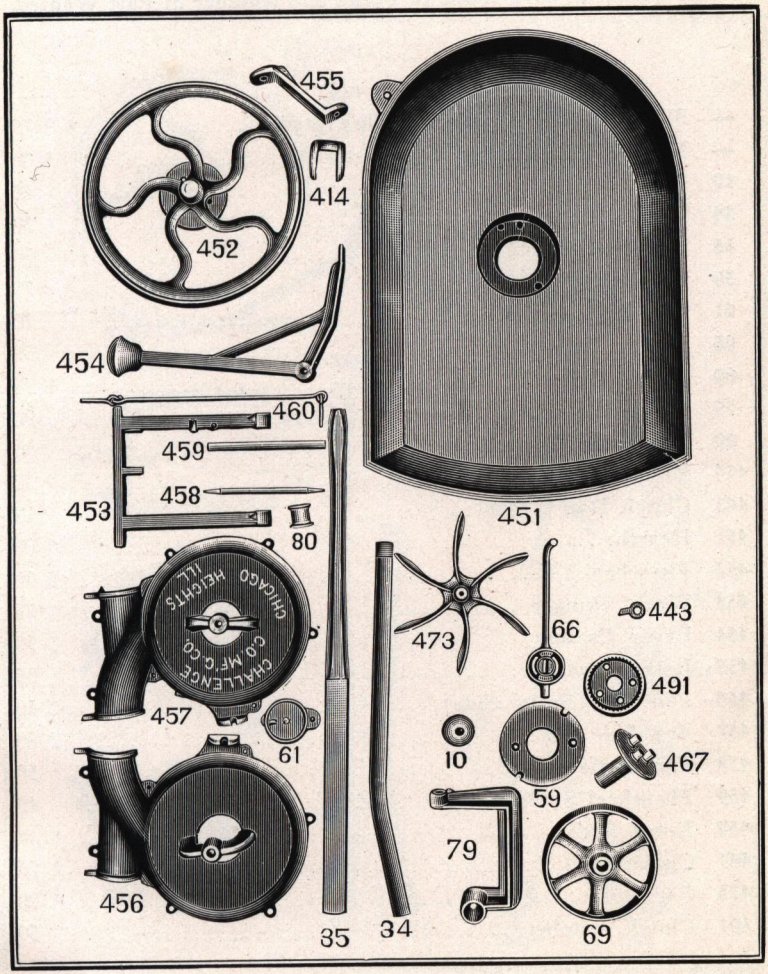
When Ordering, Give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Price.
—	Hood (not illustrated)	$ 3 25
10	Ball	10
16	Tuyere Ball	50
21	Ash Door	25
30	Fan Pulley	30
34	Leg	30
35	Handle	50
401	Hearth (not illustrated)	11 50
402	Fly-wheel	2 00
403	Wheel Hanger	2 00
404	Lever Casting	1 60
405	Lever Bracket	35
406	Fan Side (Pulley Side)	2 50
407	Fan Side	2 50
408	Fire-pot	2 00
409	Tuyere Cap	75
412	Ash Pot, Right	50
413	Ash Pot, Left	50
414	Handle Loop	30
415	Fly-wheel Shaft	40
416	Fan Shaft	50
417	Clutch Hub	1 25
418	Lever Rod	40
419	Water Tank	3 00
420	Wheel Hanger Brace	25
423	Fan	1 50
441	Clutch Ratchet	50
443	Clutch Dog	10

LONG BELTS, $1. PULL STRAPS, 40 CENTS EACH.

Challenge Forges

Nos. 2c and 3c



Repair Lists of Challenge Forges Nos. 2c and 3c

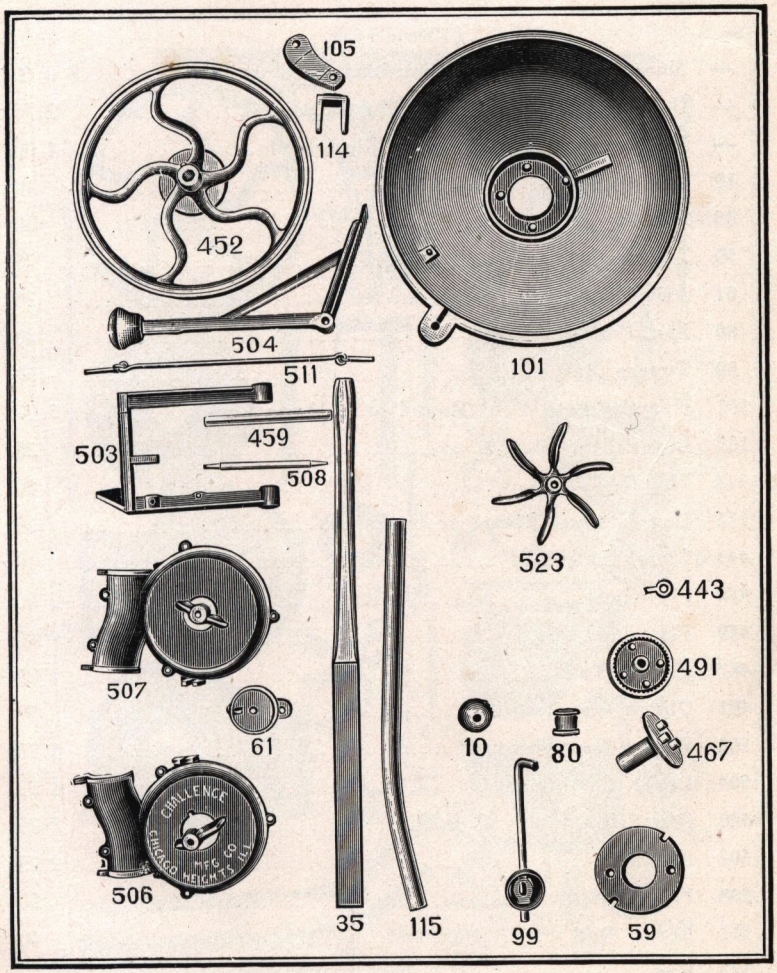
When Ordering, Give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Price.
—	Shield (No. 2 Forge), not illustrated	$ 0 75
—	Hood (No. 3 Forge), not illustrated	3 00
10	Ball	10
34	Leg	30
35	Handle	50
59	Tuyere Cap	75
61	Ash Door	20
66	Tuyere Ball	50
69	Power Pulley	1 75
79	Shifter Bracket	90
80	Fan Pulley	30
414	Handle Loop	30
443	Clutch Dog	10
451	Hearth	6 00
452	Fly-wheel	2 00
453	Wheel Hanger	1 75
454	Lever Casting	1 50
455	Lever Bracket	35
456	Fan Side (Pulley Side)	2 50
457	Fan Side	2 50
458	Fan Shaft	50
459	Fly-wheel Shaft	40
460	Lever Rod	40
467	Clutch Hub	1 25
473	Fan	1 00
491	Clutch Ratchet	50

LONG BELTS, 75 CENTS. PULL STRAPS, 40 CENTS EACH.

Challenge Forges

Nos. 4c, 5c and 5½c



Repair List of Challenge Forges Nos. 4c, 5c and 5½c

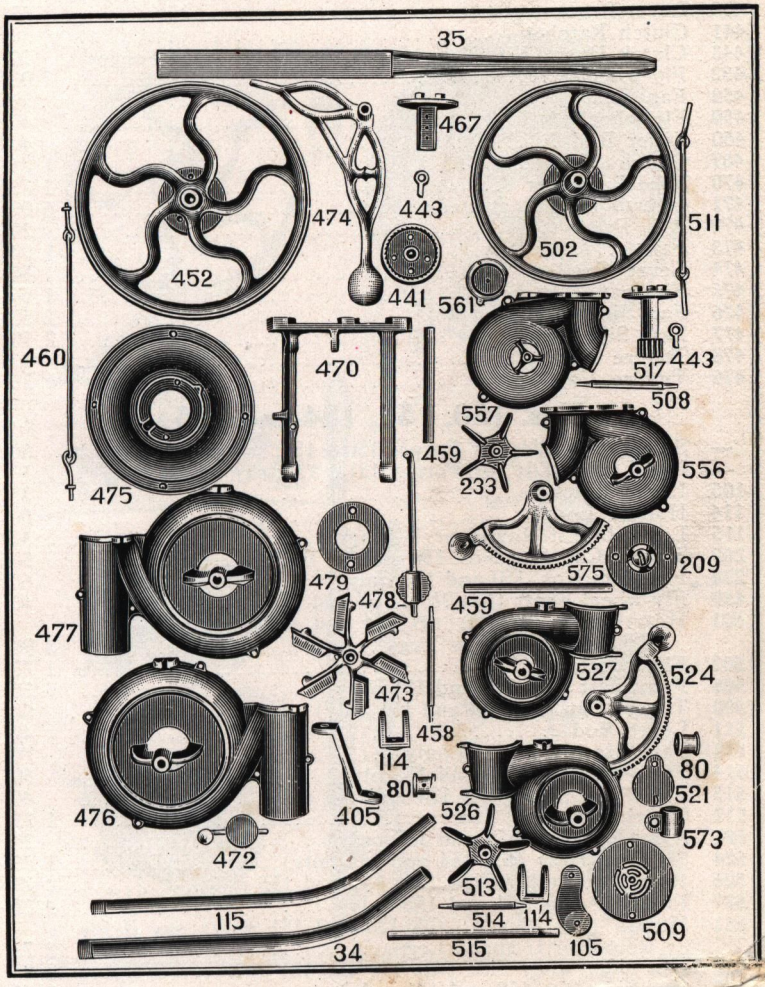
When Ordering, Give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Price.
—	Shield (No. 4 Forge), not illustrated	$ 0 60
—	Hood (No. 5 Forge), not illustrated	2 75
—	Hood (No. 5½ Forge), not illustrated	4 00
10	Ball	10
35	Handle	50
59	Tuyere Cap	75
61	Ash Door	20
80	Fan Pulley	30
99	Tuyere Ball	50
101	Hearth (state if for Round or U-shape Legs)	5 00
105	Lever Bracket	25
114	Handle Loop	30
115	Leg (state if Round or U-shape)	30
443	Clutch Dog	10
452	Fly-wheel	2 00
459	Fly-wheel Shaft	40
467	Clutch Hub	1 25
491	Clutch Ratchet	50
503	Wheel Hanger	1 75
504	Lever Casting	1 50
506	Fan Side (Pulley Side)	2 25
507	Fan Side	2 25
508	Fan Shaft	50
511	Lever Rod	40
523	Fan	90

LONG BELTS, 75 CENTS. PULL STRAPS, 40 CENTS EACH.

Chicago Forges

Nos. 150, 151, 152, 153, 154 and 155



Repair List of Chicago Forges Nos. 152 and 153

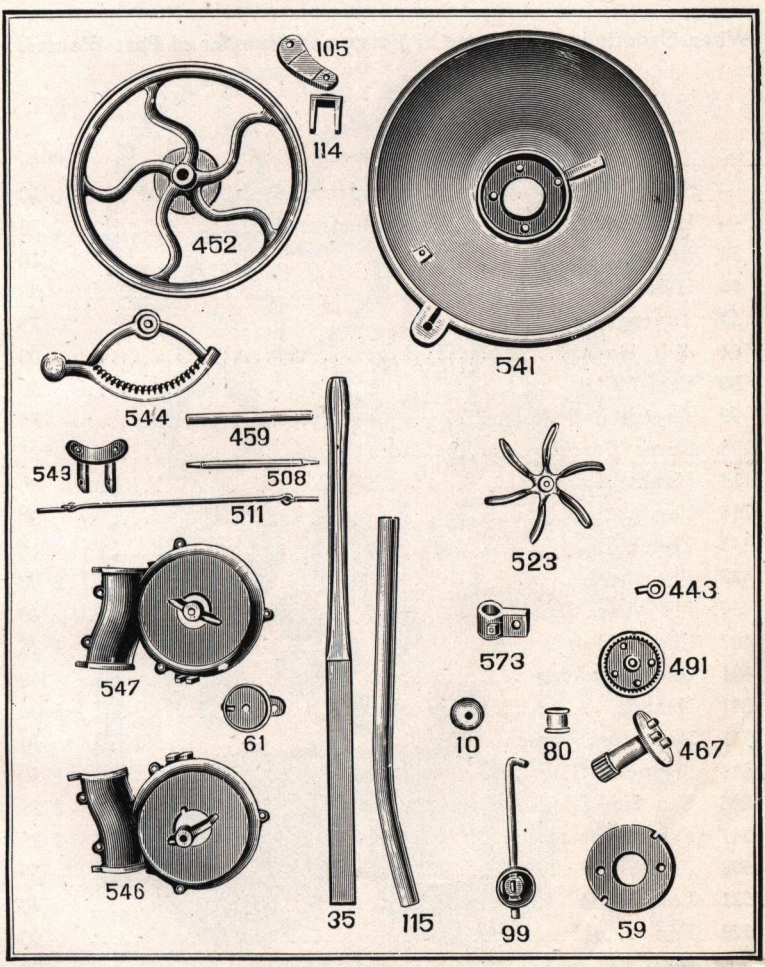
—	Shield (No. 152 Forge), not illustrated	$ 0 60
—	Hood (No. 153 Forge), not illustrated	2 75
34	Leg	30
35	Wood Hdle. (Fits Nos. 150,151,152,153,154 & 155 Forges)	50
80	Fan Pulley (Fits Nos. 150,151,152,153,154 & 155 Forges)	30
114	Handle Loop	30
405	Lever Bracket	35
441	Clutch Ratchet	50
443	Clutch Dogs (Fits Nos. 150,151,152,153,154 & 155 Forges)	10
452	Fly-wheel	2 00
458	Fan Shaft	50
459	Fly-wheel Shaft	40
460	Lever Rod	40
467	Clutch Hub	1 25
470	Wheel Hanger	1 75
471	Hearth (not illustrated)	6 00
472	Ash Door	20
473	Fan	1 00
474	Lever Casting	1 50
475	Fire-pot	1 50
476	Fan Side (Pulley Side)	2 50
477	Fan Side	2 50
478	Tuyere Ball	40
479	Tuyere Cap	75

Nos. 150, 151, 154 and 155

—	Shield (not ill'd; for Forges 150 & 154; say which Forge)	30
—	Hood (not ill'd; for Forges 151 & 155; say which Forge)	2 50
105	Lever Bracket	35
114	Handle Loop	30
115	Leg (state if Round or U-shape)	30
209	Tuyere Cap (fits Nos. 150 and 151 only)	50
233	Fan (fits Nos. 150 and 151 only)	60
459	Fly-wheel Shaft (fits Nos. 150 and 151 only)	40
501	Hearth (not illust'd; fits 154 and 155 only; say if for Round or U-shape Legs)	3 00
502	Fly-wheel	1 75
508	Fan Shaft (fits 150 and 151 only)	50
509	Tuyere Cap (fits 154 and 155 only)	60
511	Lever Rod	40
513	Fan (fits 154 and 155 only)	70
514	Fan Shaft (fits 154 and 155 only)	50
515	Fly-wheel Shaft (fits 154 and 155 only)	40
517	Clutch Hub and Gear	1 25
521	Ash Door (fits 154 and 155 only)	20
524	Segment Gear (fits 154 and 155 only)	1 25
526	Fan Side, Pulley Side (fits 154 and 155 only)	2 25
527	Fan Side (fits 154 and 155 only)	2 25
551	Hearth (not illust'd; fits 150 and 151 only; say if for Round or U-shape Legs)	2 75
556	Fan Side, Pulley Side (fits 150 and 151 only)	2 25
[illegible]	Fan Side (fits 150 and 151 only)	2 25
[illegible]	sh Door (fits 150 and 151 only)	20
57[illegible]	NG E Bracket (say if for Round or U-shape Legs)	30
[illegible]	Segment Gear (fits 150 and 151 only)	1 25

Chicago Forges

Nos. 156 and 157



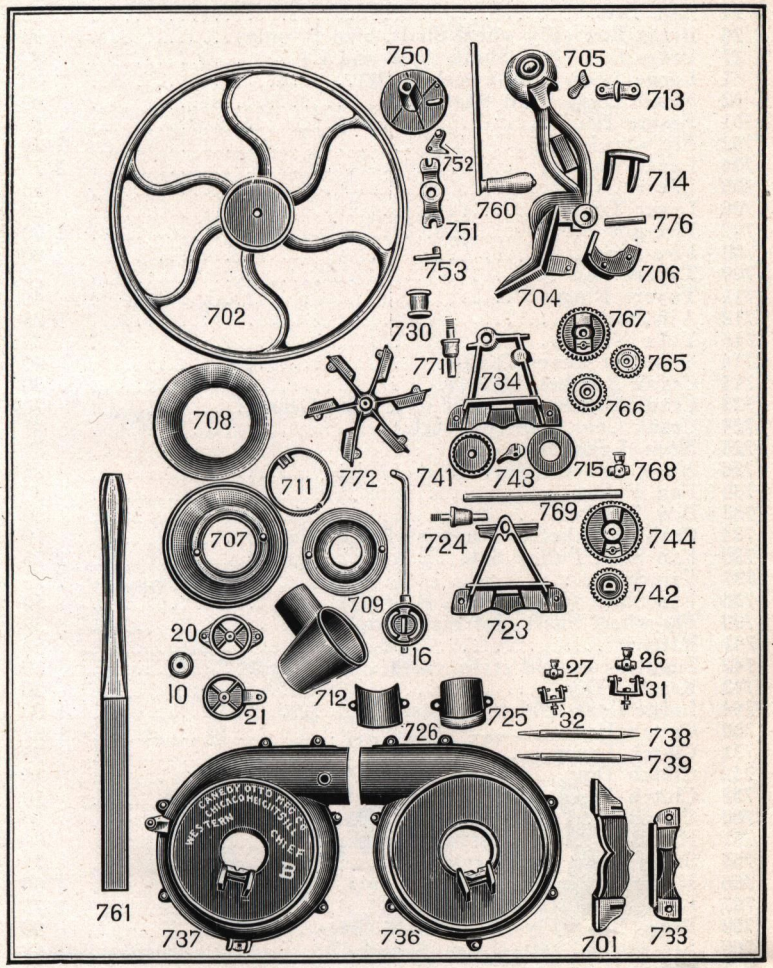
Repair List of Chicago Forges Nos. 156 and 157

When Ordering, Give Name of Forge and Number of Part Wanted.

No.	Name of Part.	Price.
—	Shield (No. 156 Forge), not illustrated	$ 0 50
—	Hood (No. 157 Forge), not illustrated	2 75
10	Ball	10
35	Handle	50
59	Tuyere Cap	75
61	Ash Door	20
80	Fan Pulley	30
99	Tuyere Ball	50
105	Lever Bracket	25
114	Handle Loop	30
115	Leg	30
443	Clutch Dog	10
452	Fly-wheel	2 00
459	Fly-wheel Shaft	40
467	Clutch Hub	1 25
491	Clutch Ratchet	40
541	Hearth	5 00
543	Loop for Segment Gear	40
544	Segment Gear	1 50
546	Fan Side, Pulley Side	2 25
547	Fan Side	2 25
508	Fan Shaft	50
511	Lever Rod	40
523	Fan	90
573	Leg Bracket	30

Western Chief Blowers

Sizes A, B and C



Repair List of Western Chief Blowers Sizes A, B and C

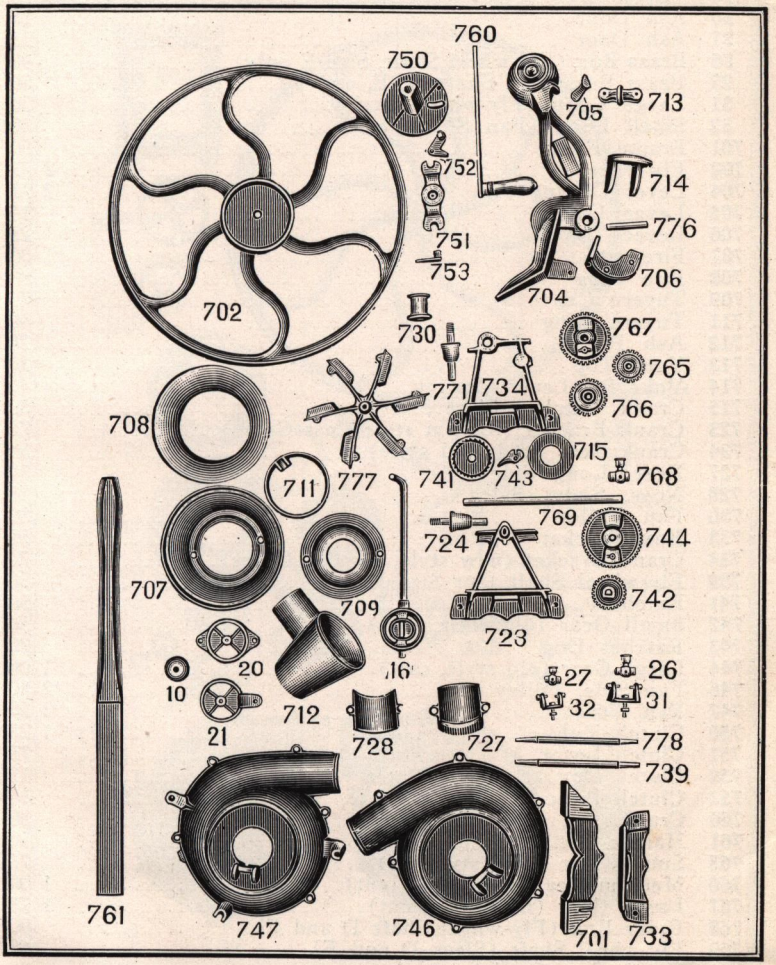
When Ordering, Give Name of Blower and Number of Part Wanted.

No.	Name of Part.	Price.
10	Ball	$ 0 10
16	Tuyere Ball	50
20	Ash Door	25
21	Ash Door	25
26	Brass Box (Fly-wheel Shaft, Size B, only)	90
27	Brass Box (Fan Shaft, A, B and C)	80
31	Large Loop (Fly-wheel Shaft)	50
32	Small Loop (Fan Shaft)	40
701	Frame Foot	50
702	Fly-wheel	2 75
704	Lever Casting	2 75
705	Lever Catch	15
706	Lever Top	25
707	Fire-pot	1 00
708	Fire Ring	80
709	Tuyere Cap	75
711	Tuyere Ring	40
712	Ash Pot	1 25
713	Yoke Top	20
714	Yoke for Lever Casting	40
715	Crank Ratchet Plate	30
723	Crank Bracket (for old style Cast Gear)	70
724	Crank Gear Stud (old style)	35
725	Nose, Long Side	30
726	Nose, Short Side	25
730	Fan Pulley	30
733	Box Bracket	50
734	Crank Bracket (for new style Cut Gears)	70
736	Fan Side, Pulley Side	2 75
737	Fan Side	2 75
738	Fan Shaft (for Sizes A, B or C)	50
739	Fly-wheel Shaft (for Size B only)	50
741	Ratchet	50
742	Small Gear (old style, cast)	50
743	Ratchet Dog	20
744	Large Gear (old style, cast)	1 00
750	Clutch Hub	1 25
751	Clutch Lever	75
752	Clutch Dog	15
753	Clutch Piece	10
	These Form Clutch Complete.	
760	Crank	50
761	Handle	50
765	Small Gear (new style, cut)	75
766	Medium Gear (new style, cut)	1 00
767	Large Gear (new style, cut)	1 75
768	Brass Box (Fly-wheel Shaft, Sizes A and C)	90
769	Fly-wheel Shaft (Sizes A and C)	65
771	Crank Gear Stud (new Gears, cut)	35
772	Fan	1 60
776	Lever Casting Shaft	10

LONG BELTS, $1.25. PULL STRAPS, 40 CENTS EACH.

Western Chief Blowers

Sizes D, E and F



Repair List of Western Chief Blowers Sizes D, E and F

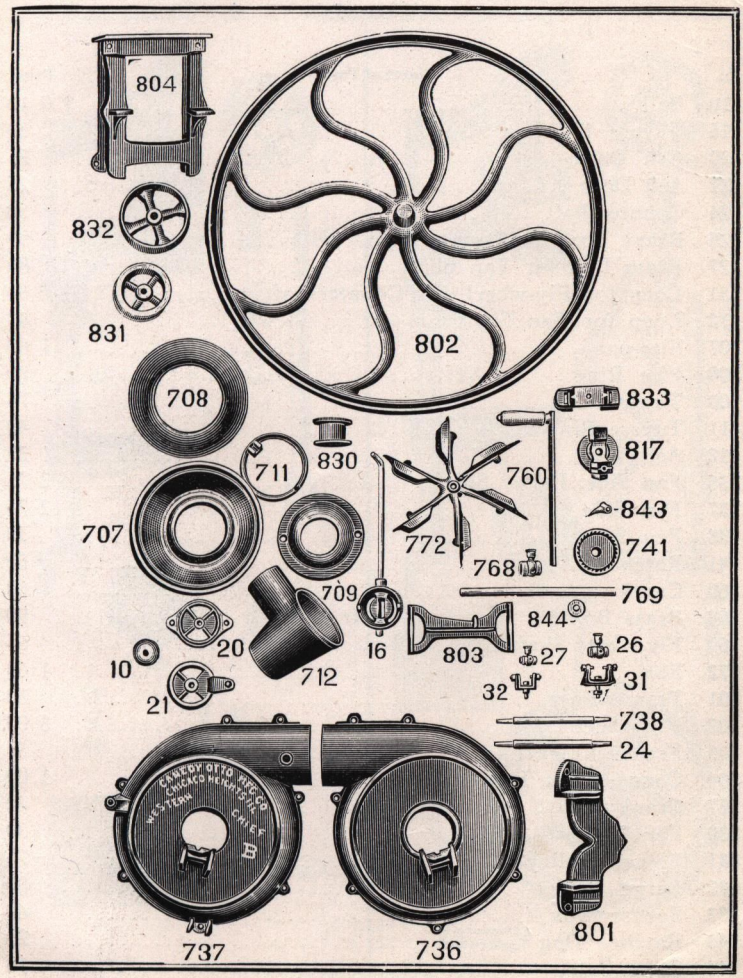
When Ordering, Give Name of Blower and Number of Part Wanted.

No.	Name of Part.	Price.
10	Ball	$ 0 10
16	Tuyere Ball	50
20	Ash Door	25
21	Ash Door	25
26	Brass Box (Fly-wheel Shaft, Size E only)	90
27	Brass Box (Fan Shaft D, E, and F)	80
31	Large Loop (Fly-wheel Shaft)	50
32	Small Loop (Fan Shaft)	40
701	Frame Foot	50
702	Fly-wheel	2 75
704	Lever Casting	2 75
705	Lever Catch	15
706	Lever Top	25
707	Fire-pot	1 00
708	Fire Ring	80
709	Tuyere Cap	75
711	Tuyere Ring	40
712	Ash Pot	1 25
713	Yoke Top	20
714	Yoke for Lever Casting	40
715	Crank Ratchet Plate	30
723	Crank Bracket (for old style Cast Gears)	70
724	Crank Gear Stud (old style)	35
727	Nose, Long Side	30
728	Nose, Short Side	25
730	Fan Pulley	30
733	Box Bracket	50
734	Crank Bracket (new style, for Cut Gears)	70
739	Fly-wheel Shaft (for Size E only)	50
741	Ratchet	50
742	Small Gear (old style, cast)	50
743	Ratchet Dog	20
744	Large Gear (old style, cast)	1 00
746	Fan Side, Pulley Side	2 50
747	Fan Side	2 50
750	Clutch Hub	1 25
751	Clutch Lever	75
752	Clutch Dog	15
753	Clutch Piece	10
	(These Form Clutch Complete.)	
760	Crank	50
761	Handle	50
765	Small Gear (new style, cut)	75
766	Medium Gear (new style, cut)	1 00
767	Large Gear (new style, cut)	1 75
768	Brass Box (Fly-wheel Shaft D and F)	90
769	Fly-wheel Shaft (Sizes D and F)	65
771	Crank Gear Stud (new Gears, cut)	35
776	Lever Casting Shaft	10
777	Fan	1 50
778	Fan Shaft (Sizes D, E or F)	50

LONG BELTS, $1.25. PULL STRAPS, 40 CENTS EACH.

Western Chief Blower

Size G



Repair List of Western Chief Blower, Size G

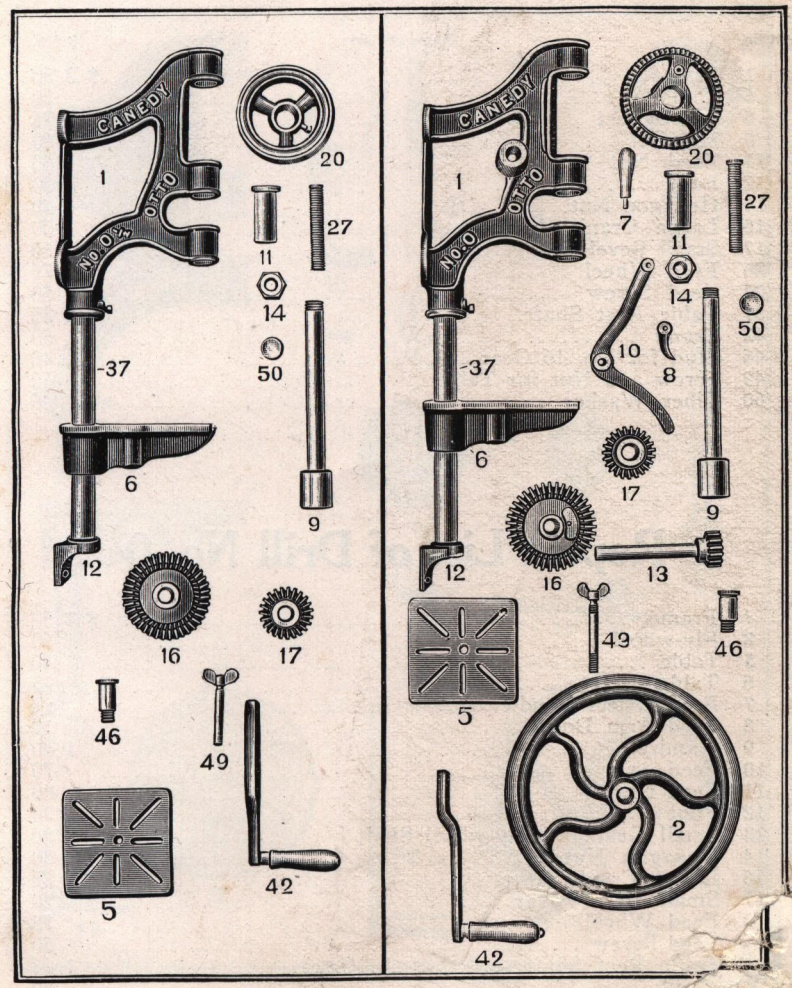
When Ordering, Give Name of Blower and Number of Part Wanted.

No.	Name of Part.	Price.
10	Ball	$ 0 10
16	Tuyere Ball	50
20	Ash Door	25
21	Ash Door	25
24	Countershaft	50
26	Brass Box for Countershaft	90
27	Brass Box for Fan Shaft	80
31	Loop for Fly-wheel and Countershaft	50
32	Loop for Fan Shaft	40
707	Fire-pot	1 00
708	Fire Ring	80
709	Tuyere Cap	75
711	Tuyere Ring	40
712	Ash Pot	1 25
736	Fan Side, Pulley Side	2 75
737	Fan Side	2 75
738	Fan Shaft	50
741	Ratchet	50
760	Crank	50
768	Brass Box for Fly-wheel Shaft	90
769	Fly-wheel Shaft	65
772	Fan	1 60
801	Frame Foot	50
802	Fly-wheel	3 00
803	Frame Bracket	50
804	Countershaft Bracket	1 00
817	Crank Hub	40
830	Fan Pulley	30
831	Flange Pulley	75
832	Large Pulley	80
833	Square Box	40
843	Ratchet Dog	20
844	Steel Collar	10

LONG BELTS, $1.50. SHORT BELTS, 60 CENTS.

Western Chief Drills

Nos. 0½ and 0



Repair List of Drill No. 0½

When Ordering, Give Number of Drill and Number of Part Wanted.

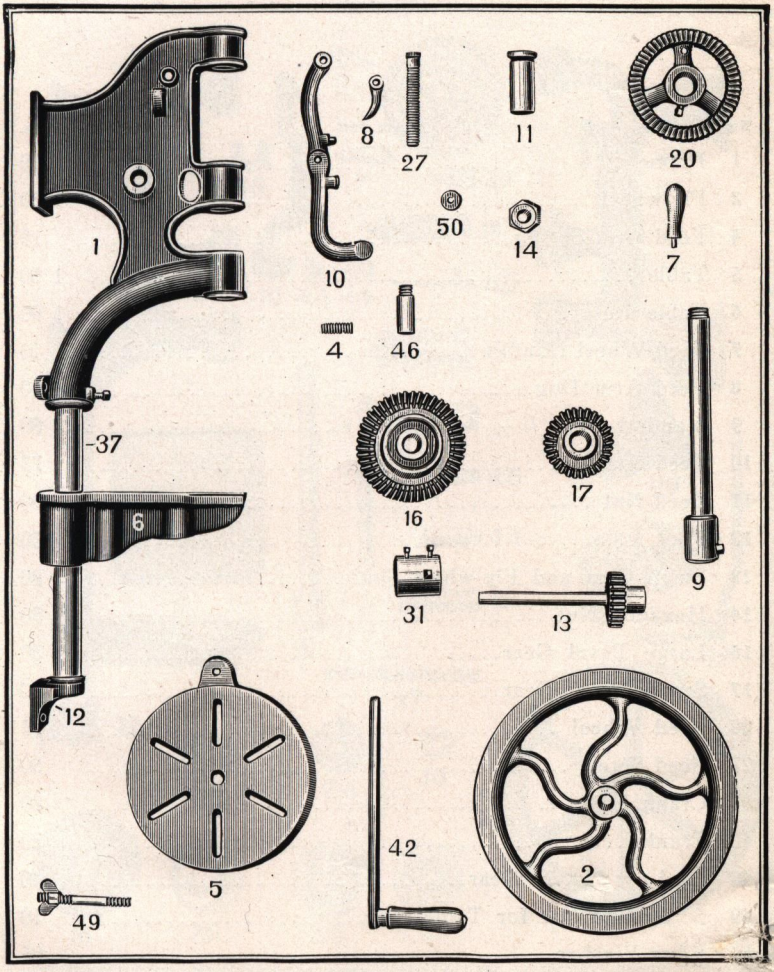
No.	Name of Part.	Price.
1	Frame	$ 2 50
5	Table	50
6	Table Rest	75
9	Mandrel	1 80
11	Feed Nut	60
12	Foot	30
14	Hexagon Nut	30
16	Large Crank Gear	1 00
17	Small Bevel Gear	50
20	Feed Wheel	75
27	Feed Screw	50
37	Table Rest Shaft	1 25
42	Crank	50
46	Stud for No. 16 Gear	40
49	Screw and Nut for Table	10
50	Fiber Washer	05

Repair List of Drill No. 0

1	Frame	$ 2 50
2	Fly-wheel	1 50
5	Table	50
6	Table Rest	75
7	Feed Wheel Handle	10
8	Feed Arm Dog	10
9	Mandrel	1 80
10	Feed Arm	70
11	Feed Nut	60
12	Foot	30
13	Small Gear and Fly-wheel Shaft	80
14	Hexagon Nut	30
16	Large Crank Gear	1 25
17	Small Bevel Gear	50
20	Feed Wheel	75
84	Feed Screw	50
844	Table Rest Shaft	1 25
	nk	50
	No. 16 Gear	40
	LONG BE t for Table	10
		05

Western Chief Drill

No. 00



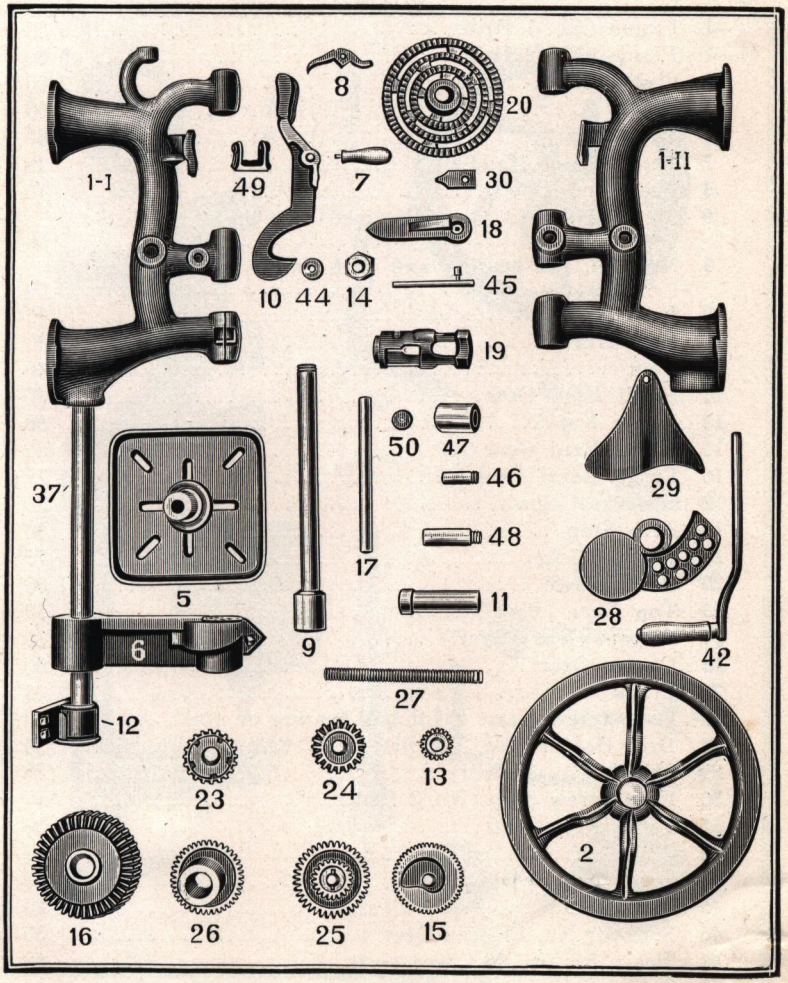
Repair List of Drill No. 00

When Ordering, Give Number of Drill and Number of Part Wanted.

No.	Name of Part.	Price.
1	Frame	$ 3 00
2	Fly-wheel	1 50
4	Feed Arm Spring	10
5	Table	1 60
6	Table Rest	1 00
7	Feed Wheel Handle	10
8	Feed Arm Dog	10
9	Mandrel (state if ½ or 41/64 inch)	1 80
10	Feed Arm	75
11	Feed Nut	60
12	Foot	30
13	Small Gear and Fly-wheel Shaft	80
14	Hexagon Nut	30
16	Large Bevel Gear	1 50
17	Small Bevel Gear	50
20	Feed Wheel	75
27	Feed Screw	50
31	Crank Hub	80
42	Crank	50
46	Stud for No. 16 Gear	40
49	Screw and Nut for Table	10
50	Fiber Washer	05

Western Chief Drills

Nos. 1 and 2



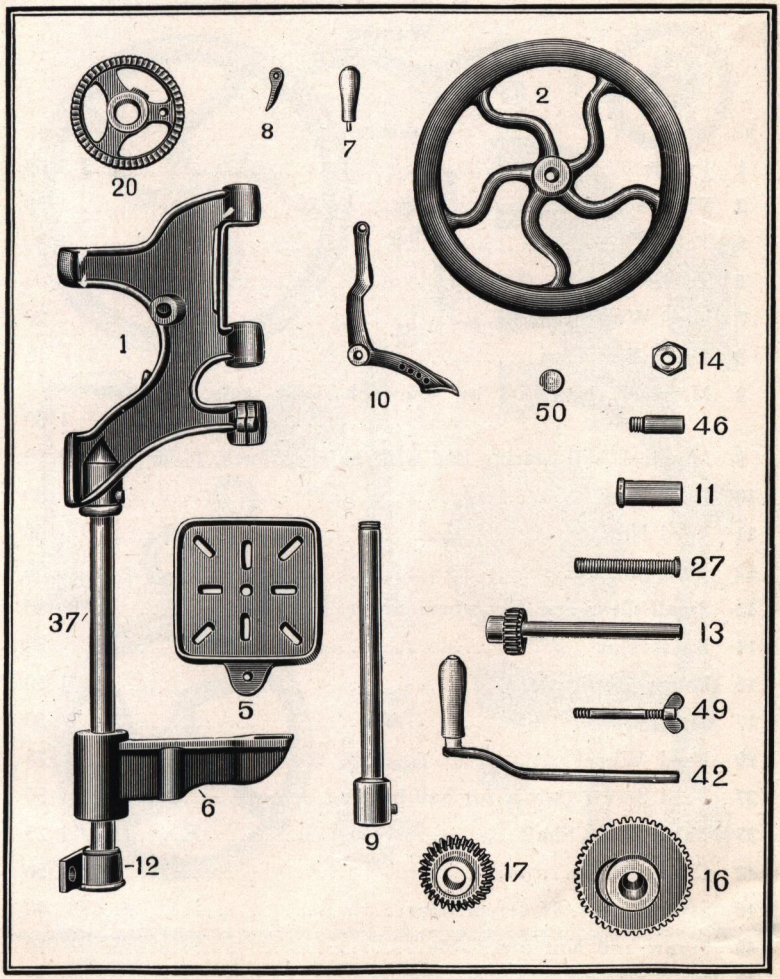
Repair List of Western Chief Drills Nos. 1 and 2

When Ordering, Give Number of Drill and Number of Part Wanted.

No.	Name of Part.	Price.
I—1	Frame (No. 1 Drill)	$ 6 00
II—1	Frame (No. 2 Drill)	6 00
2	Fly-wheel	2 00
5	Table	2 50
6	Table Rest	1 25
7	Feed Wheel Handle	20
8	Feed Rod Dog	10
9	Mandrel (bored ½ or 41/64 inch), old style, not ball-bearing	1 80
9	Mandrel, ball-bearing and with Safety Chuck, ½ or 41/64	3 80
10	Feed Arm	75
11	Feed Nut	80
12	Foot	40
13	Small Feed Gear	30
14	Brass Nut	50
15	Large Feed Gear	80
16	Large Bevel Gear	1 75
17	Fly-wheel Shaft	50
18	Arm Stop	30
19	Return Yoke	75
20	Feed Wheel	1 00
23	Top Gear (Bevel)	50
24	Bottom Gear (Bevel)	50
25	Double Gear	1 00
26	Crank Gear	1 25
27	Feed Screw (state if for ball-bearing or not)	50
28	Drill Holder (No. 2 Drill)	50
29	Shield (No. 2 Drill)	30
30	Feed Screw Stop (No. 2 Drill)	10
37	Table Rest Shaft	1 50
42	Crank	50
44	Feed Arm Roller	20
45	Return Trip	20
46	Stud for No. 15 Feed Gear	30
47	Sleeve for No. 26 Crank Gear	60
48	Stud for Sleeve No. 47	40
49	Loop for Feed Arm	20
50	Fiber Washer	05

Western Chief Drill

No. 3



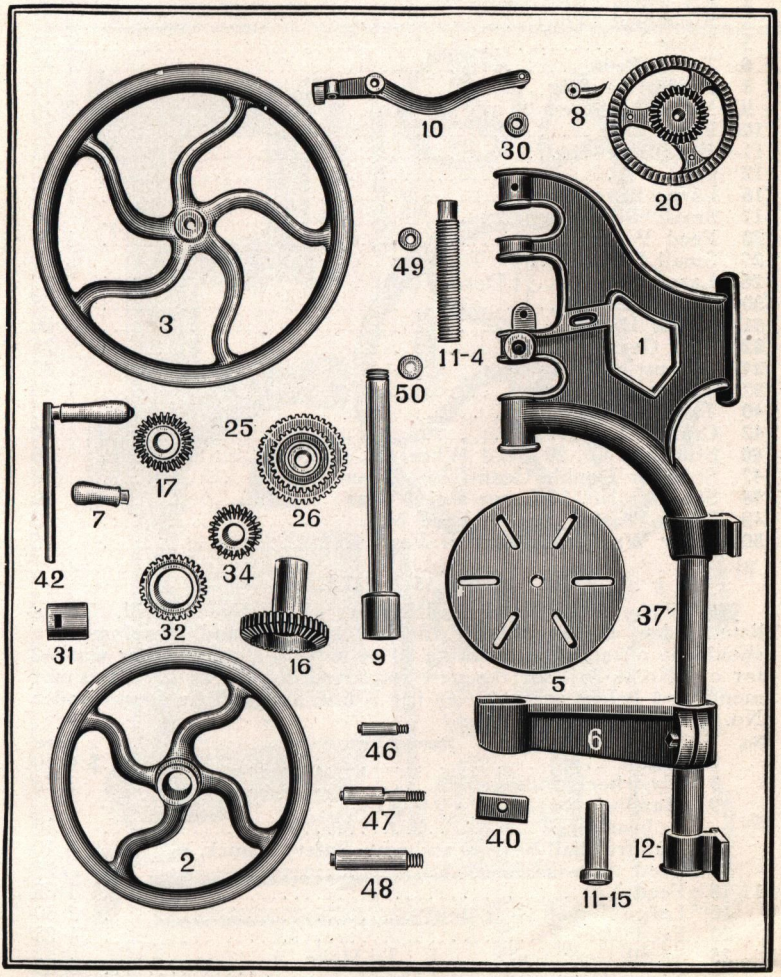
Repair List of Western Chief Drill No. 3

When Ordering, Give Number of Drill and Number of Part Wanted.

No.	Name of Part.	Price.
1	Frame	$ 3 00
2	Fly-wheel	1 50
5	Table	1 60
6	Table Rest	1 00
7	Feed Wheel Handle	20
8	Feed Arm Dog	10
9	Mandrel (bored ½ or 41/64 inch), old style, not ball-bearing	1 80
9	Mandrel, ball-bearing and with Safety Chuck, ½ or 41/64	3 80
10	Feed Arm	80
11	Feed Nut	60
12	Foot	30
13	Small Gear and Fly-wheel Shaft	80
14	Brass Nut	50
16	Large Bevel Gear	1 50
17	Small Bevel Gear	50
20	Feed Wheel	75
27	Feed Screw (say if for ball-bearing or not)	50
37	Table Rest Shaft	1 25
42	Crank	50
46	Stud for No. 16 Bevel Gear	40
49	Screw and Nut for Table	10
50	Fiber Washer	05

Western Chief Drills

Nos. 4 and 15



A large portion of above are interchangeable in our Nos. 4 and 15 Drills. See opposite page.

Repair List of Western Chief Drills Nos. 4 and 15

When Ordering, Give Number of Drill and Number of Part Wanted.

No. 4 DRILL.

No.	Name of Part.	Price.
1	Frame	$ 6 50
2	Fly-wheel (with Gear)	2 00
3	Fly-wheel (Top)	2 25
5	Table	2 50
6	Table Rest	1 40
8	Feed Arm Dog	10
9	Mandrel (bored ½ or 41/64 inch)	2 10
10	Feed Arm	75
11-4	Feed Nut	1 25
12	Foot	40
16	Large Bevel Gear	1 75
17	Small Bevel Gear	50
20	Feed Wheel	1 25
25	Small Gear ..... { To Make	2 25
26	Large Gear ..... { Double Gear }	
30	Iron Washer	05
31	Crank Hub	60
32	Flat Gear	75
34	Eccentric Bevel Gear	80
37	Table Rest Shaft	1 80
40	Table Clamp	10
42	Crank	50
46	Stud for No. 20 Feed Wheel	30
47	Stud for Double Gears Nos. 25 and 26	50
48	Stud for No. 16 Large Bevel Gear	60
49	Fiber Washer, top of Feed Nut	05
50	Fiber Washer, bottom of Feed Nut	05

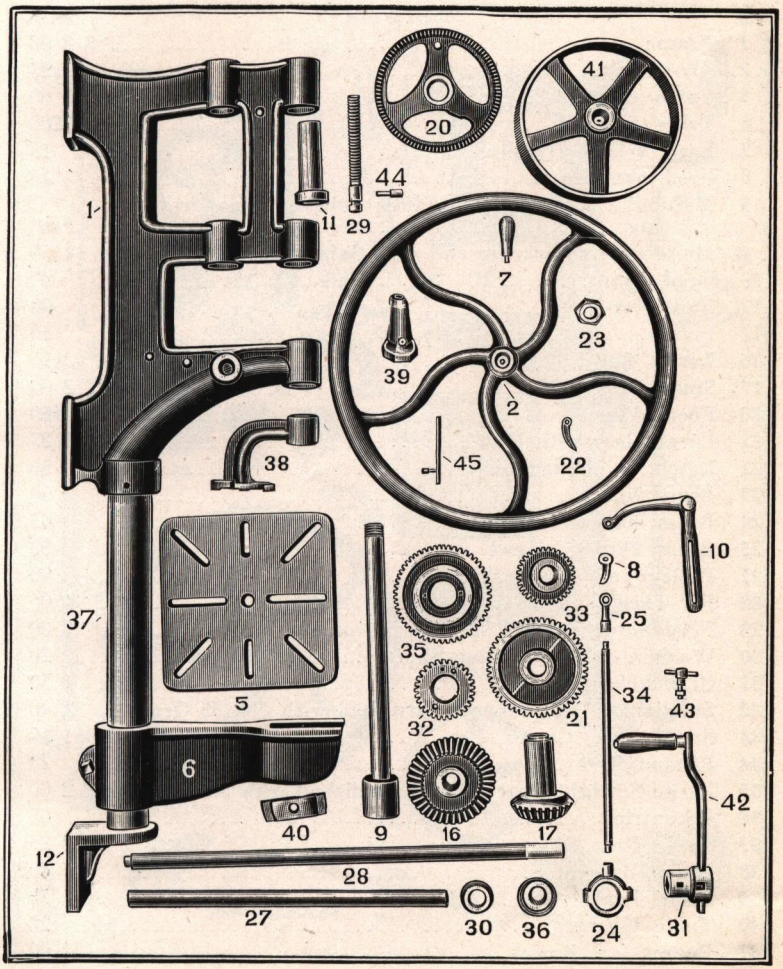
No. 15 DRILL.

☞Many of the No. 4 Drill Repairs will fit No. 15 Drill. Those listed below are **exclusively** for No. 15 Drill, and therefore care should be observed in ordering to be sure to state whether wanted for old No. 4 Drill or the new improved No. 15 Drill. Parts **not** mentioned below are same as for No. 4, and will be found under No. 4 list above.

No.	Name of Part.	Price.
1	Frame	$ 6 50
3	Fly-wheel, Pulley Side	2 25
9	Mandrel (bored ½ or 41/64 inch), old style, not ball-bearing	2 10
9	Mandrel, ball-bearing and with Safety Chuck, ½ or 41/64	4 10
10	Feed Arm	75
11-15	Feed Nut	1 25
16	Large Bevel Gear (cut)	2 50
20	Feed Wheel	1 25
25	Small Gear (cut) .... { To Make	3 00
26	Large Gear (cut) .... { Double Gear }	
29	Feed Screw (not illus.), say if for ball-bearing or not	1 00
31	Crank Hub	60
32	Flat Gear (cut)	1 25
—	Shaft for Double Gear and Fly-wheel	1 00

Western Chief Drills

Nos. 7 and 12



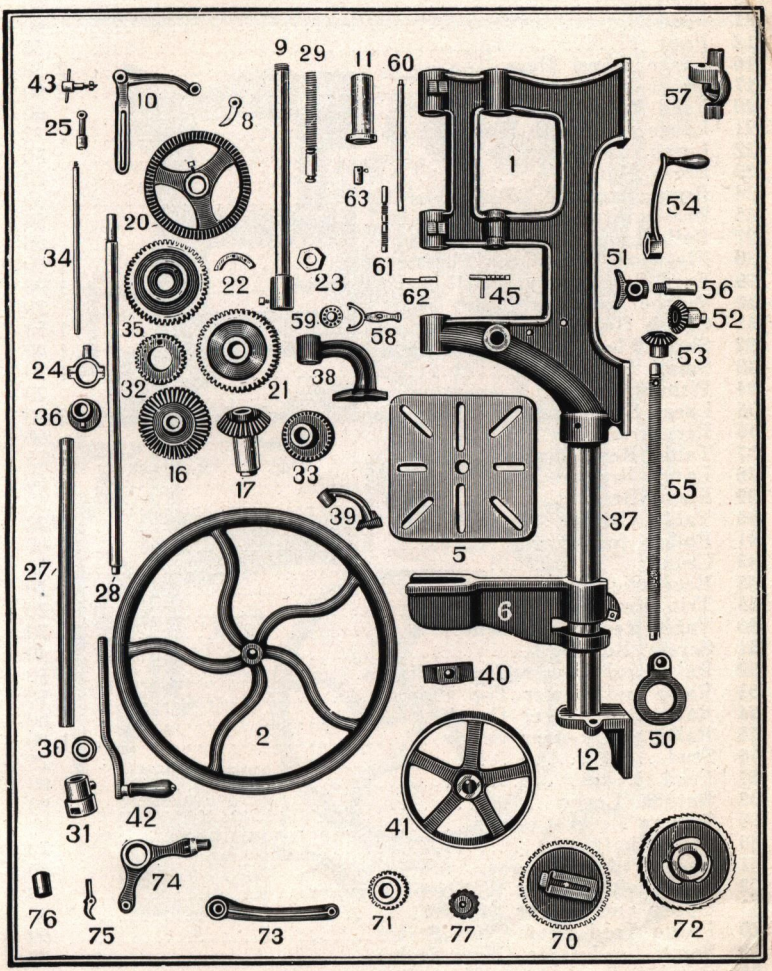
Repair List of Western Chief Drills Nos. 7 and 12

When Ordering, Give Name of Part Wanted, and State PARTICULARLY Whether for No. 7 or No. 12 Drill.

No.	Name of Part.	Price.
1	Frame	$ 8 00
2	Fly-wheel	2 25
5	Table	3 00
6	Table Rest	2 00
7	Feed Wheel Handle	15
8	Feed Arm Dog	10
9	Mandrel (Bored ½ or 41/64 inch), old style, not ball-bearing	2 50
9	Mandrel, ball-bearing and with Safety Chuck, ½ or 41/64	4 50
10	Feed Arm	60
11	Feed Nut	90
12	Foot	50
16	Large Bevel Gear	2 50
17	Small Bevel Gear	2 00
20	Feed Wheel	60
21	Large Gear with Hub	2 25
22	Latch, to change Gear	50
23	Brass Nut	50
24	Brass Eccentric Strap	65
25	Brass Pitman Head	50
27	Pulley and Crank Shaft	90
28	Fly-wheel and Gear Shaft	1 00
29	Feed Screw (say if ball-bearing or not)	1 00
30	Washer, cast for Pulley Shaft	20
31	Crank Hub	1 50
32	Small Flat Gear (always furnished with No. 35 Gear)	1 40
33	Small Hub Gear	1 50
34	Pitman Rod	20
35	Large Straight Gear (always furnished with No. 32 Gear)	2 00
36	Eccentric	60
37	Table Rest Shaft	2 25
38	Large Bracket	60
39	Small Bracket	50
40	Table Clamp	20
41	Pulley for Power	2 00
42	Crank	50
43	Eccentric Bolt	30
44	Screw, for Feed Screw	10

Western Chief Drill

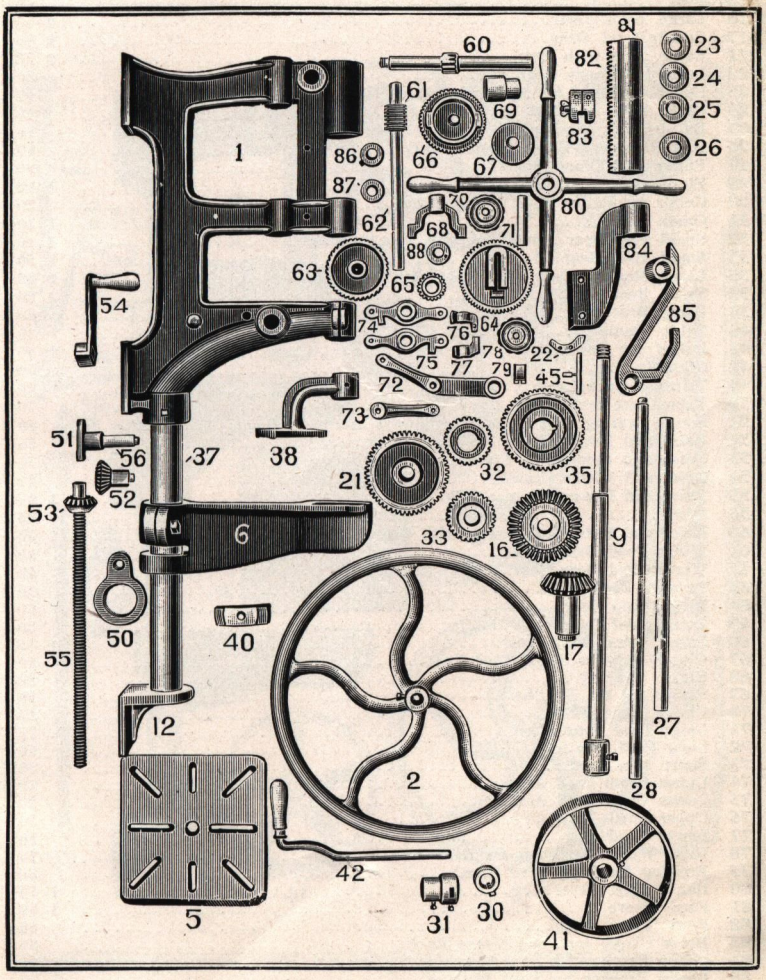
No. 14



No.	REPAIR LIST OF WESTERN CHIEF DRILL No. 14	Price.
1	Frame	$ 8 50
2	Fly-wheel	2 25
5	Table	3 00
6	Table Rest	2 00
8	Feed Arm Dog	10
9	Mandrel (bored ½ or 41/64 inch), old style, not ball-bearing	2 50
9	Mandrel, ball-bearing and with Safety Chuck, ½ or 41/64.	4 50
10	Feed Arm	60
11	Feed Nut	90
12	Foot	50
16	Large Bevel Gear	2 50
17	Small Bevel Gear	2 00
20	Feed Wheel	60
21	Large Gear with Hub	2 25
22	Latch, to change Gear	50
23	Brass Nut	50
24	Brass Eccentric Strap	65
25	Brass Pitman Head	50
27	Pulley and Crank Shaft	90
28	Fly-wheel and Gear Shaft	1 00
29	Feed Screw (say if ball-bearing or not)	1 00
30	Washer, cast for Pulley Shaft	20
31	Crank Hub	1 50
32	Small Flat Gear (always furnished with No. 35 Gear)	1 40
33	Small Hub Gear	1 50
34	Pitman Rod	20
35	Large Straight Gear (always furnished with No. 32 Gear)	2 00
36	Eccentric	60
37	Table Rest Shaft	2 25
38	Large Bracket	60
39	Small Bracket	50
40	Table Clamp	20
41	Pulley for Power	2 00
42	Crank	50
43	Eccentric Bolt	30
45	Trip for Gear Latch	20
50	Table Rest Screw Nut	70
51	Screw Bearing	40
52	Raise and Lower Crank Pinion	50
53	Raise and Lower Top Pinion	50
54	Raise and Lower Crank	60
55	Raise and Lower Screw	1 00
56	Stud	25
57	Feed Yoke	1 00
58	Return Lever	90
59	Return Lever Collar	80
60	Stop Shaft	20
61	Feed Yoke Plunger	40
62	Catch with Spring to No. 61 Plunger	20
63	Upper and Lower Stops	30
70	Large Feed Gear (New Style)	60
71	Small Feed Gear (New Style)	30
72	Ratchet Feed Gear (New Style)	70
73	Long Feed Arm (New Style)	60
74	Cross Feed Arm (New Style)	40
75	Feed Dog (New Style)	10
76	Bushing for No. 73 Feed Arm (New Style)	30
77	Lock-nut for No. 73 Feed Arm (New Style)	10

Western Chief Drills

Nos. 16 and 17

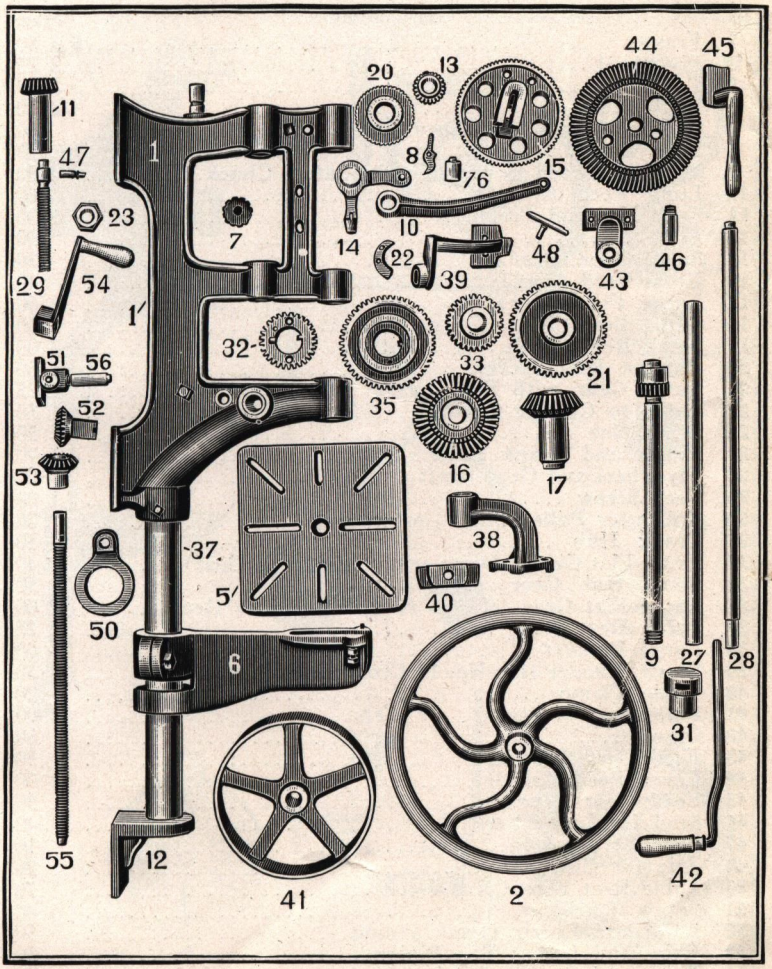


Repair List of Drills Nos. 16 and 17

No.	Name of Part.	Price.
1	Frame	$10 00
2	Fly-wheel	2 50
5	Table	3 00
6	Table Rest	2 50
9	Mandrel with Safety Chuck, bored ½ or 41-64 inch; state if for single ball-bearing or train of balls	5 00
12	Foot	50
16	Large Bevel Gear	2 50
17	Small Bevel Gear	2 00
21	Large Gear with Hub	2 25
22	Latch to Change Gear	50
23	Upper Lock-nut for Mandrel	40
24	Upper Adjusting Nut for Mandrel	40
25	Ball-bearing Washer	20
26	Ball Retainer (Brass)	40
27	Pulley and Crank Shaft	90
28	Fly-wheel and Gear Shaft	1 00
30	Collar for Pulley Shaft	20
31	Crank Hub	1 50
32	Small Flat Gear (furnished with No. 35 Gear)	1 40
33	Small Hub Gear	1 50
35	Large Straight Gear (furnished with No. 32 Gear)	2 00
37	Table Rest Shaft	2 25
38	Large Bracket	60
40	Table Clamp	20
41	Pulley for Power	2 00
42	Crank	50
45	Trip for Gear Latch	20
50	Table Rest Screw Nut	70
51	Screw Bearing (51, 52 and 56 always assembled)	40
52	Raise and Lower Crank Pinion	50
53	Raise and Lower Top Pinion	50
54	Raise and Lower Crank	60
55	Raise and Lower Screw	1 00
56	Stud	25
60	Lever and Feed Gear Shaft, with Gear	1 50
61	Worm Feed Gear	80
62	Worm Feed Gear Shaft	50
63	Ratchet Feed Gear	60
64	Large Feed Gear	60
65	Small Feed Gear	30
66	Large Spiral Feed Gear	1 00
67	Clutch Hub for Spiral Feed Gear	30
68	Clutch Bracket	30
69	Sleeve for No. 60 Shaft	30
70	Clutch Hand Wheel	25
71	Large Feed Gear Shaft	25
72	Long Feed Arm	60
73	Short Arm Feed	30
74	Upper Cross Feed Arm	30
75	Lower Cross Feed Arm	30
76	Upper Feed Dog	10
77	Lower Feed Dog	10
78	Hand Wheel, Lock-nut for Feed Arm	20
79	Bushing for Long Feed Arm	30
80	Hand, Feed Lever	1 50
81	Feed Sleeve	1 50
82	Feed Sleeve Rack	60
83	Brass Clamp for Feed Sleeve Rack	80
84	Upper Bracket for Feed Bearing	1 00
85	Lower Bracket for Feed Bearing	1 00
86	Collar for Feed Gear Shaft	20
87	Fiber Washer for Feed Gear Shaft	10
88	Clutch Screw, Bearing	15
—	Iron Column and Base, No. 17 Drill	15 70

Western Chief Drill

No. 18



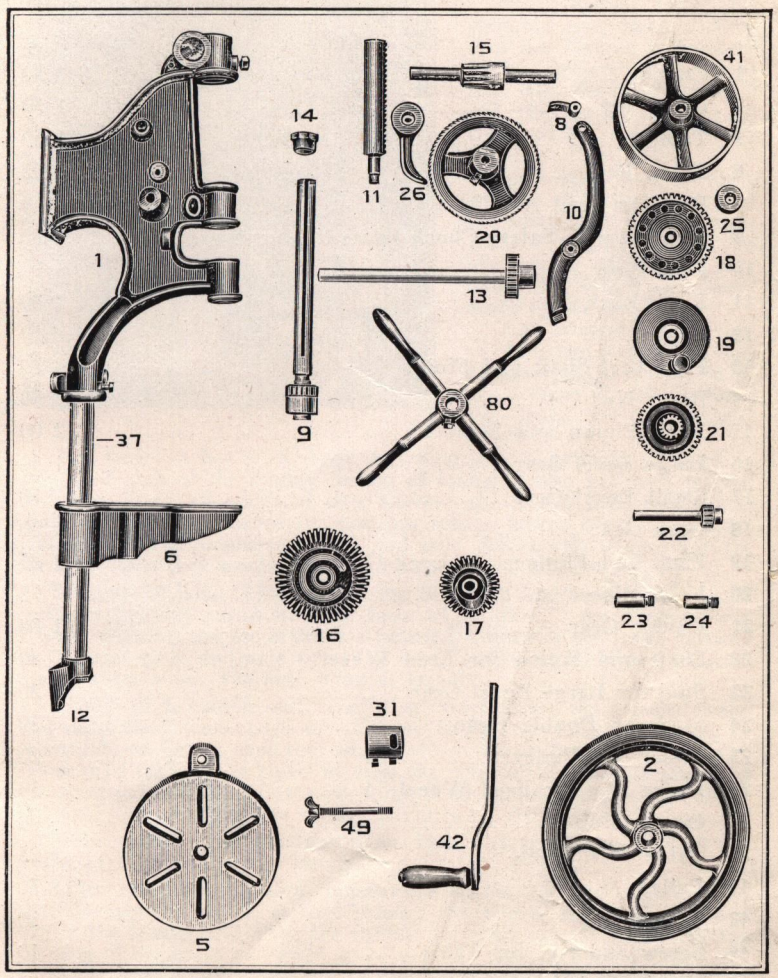
Repair List of Western Chief Drill No. 18

When Ordering, Give Number of Drill and Number of Part Wanted.

No.	Name of Part.	Price.
1	Frame	$ 8 50
2	Fly-wheel	2 25
5	Table	3 00
6	Table Rest	2 00
7	Lock-nut for No. 10 Feed Arm	30
8	Feed Dog	10
9	Mandrel (bored ½ or 41/64 inch) Safety Chuck	4 50
10	Long Feed Arm	60
11	Feed Nut and Pinion	1 00
12	Foot	50
13	Small Feed Gear	30
14	Cross Feed Arm	40
15	Large Feed Gear	60
16	Large Bevel Gear	2 50
17	Small Bevel Gear	2 00
20	Ratchet Feed Gear	60
21	Large Gear, with Hub	2 25
22	Latch to Change Gears	50
23	Brass Nut	50
27	Pulley and Crank Shaft	90
28	Fly-wheel and Gear Shaft	1 00
29	Feed Screw	1 00
30	Collar for Pulley Shaft (not shown)	20
31	Crank Hub	1 50
32	Small Flat Gear (always sent with No. 35 Gear)	1 40
33	Small Hub Gear	1 50
35	Large Flat Gear (always sent with No. 32 Gear)	2 00
37	Table Rest Shaft	2 25
38	Large Bracket	60
39	Small Bracket (for No. 14 Cross Feed Arm)	50
40	Table Clamp	20
41	Pulley for Power	2 00
42	Crank	50
43	Feed Gear Bracket	50
44	Lever Feed Gear	1 00
45	Feed Gear Lever	50
46	Stud for Lever Feed Gear	40
47	Feed Screw Stop	10
48	Trip for Gear Latch	20
50	Table Rest Screw Nut	70
51	Screw Bearing	40
52	Raise and Lower Crank Pinion	50
53	Raise and Lower Top Pinion	50
54	Raise and Lower Crank	60
55	Raise and Lower Screw	1 00
56	Stud for No. 51 Gear	25
76	Bushing for No. 10 Feed Arm	30

Western Chief Drill

No. 19

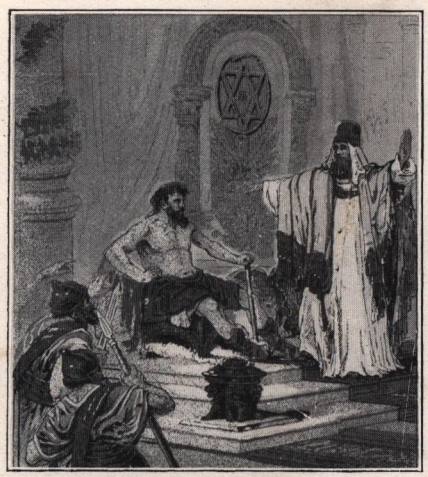


Repair List of Drill No. 19

When Ordering, Give Number of Drill and Number of Part Wanted.

No.	Name of Part.	Price.
1	Frame	$ 3 50
2	Fly-wheel	1 50
5	Table	1 60
6	Table Rest	1 25
8	Dog for Feed Arm	10
9	Mandrel with Safety Chuck (state if ½ or 41/64 inch)	3 80
10	Feed Arm	90
11	Feed Rack	2 00
12	Foot	30
13	Fly-wheel Shaft and Pinion	80
14	Brass Nut	50
15	Rack Pinion and Shaft	2 00
16	Large Bevel Gear	1 50
17	Small Bevel Gear	50
18	Lock Gear	1 50
19	Plate and Plunger for Lock Gear	1 25
20	Feed Wheel	75
21	Double Gear	1 00
22	Shaft and Pinion for Feed Wheel	80
23	Stud for Large Bevel Gear	30
24	Stud for Double Gear	30
25	Collar for Pulleys	20
26	Large Dog for Feed Wheel	30
31	Crank Hub	60
37	Table Rest Shaft	1 25
41	Pulley	1 50
42	Crank	50
49	Screw and Nut for Table	10
80	Hand Feed Lever	1 25

THE SMITH
THE SOVEREIGN *of* ALL ARTISANS



IN the year B. C. 1005, Solomon, King of Israel, spake unto his servants and saith, "Now that the Temple is finished, let us declare praise unto him who deserveth praise," and he bade them each speak of the works he hath done.

And Hiram of Tyre, a worker in brass, spoke of the images he had wrought for the mighty Temple by his talent, *aided by the tools of steel that were made by the Smith.*

And Abinadab, a carver of cedar and kindred woods, declared aloud his praise of the *Ironsmith, who created the tools for his handiwork.*

And Geber, a hewer of stone, and Baana, who wrought wonders in iron, and each of the mighty throng of builders, who gathered around the wise King, all admitted that *without the Smith who made their tools* whereby they carved the precious stones, hewed the marble slabs, and wrought in hammered brass and gold the cherub images for the lordly temple, they would have been helpless and without power.

Then spoke King Solomon, "Bring forth the Smith! Command him into my presence, that he may hear of all this." And straightway cometh from among the artisans a bearded Vulcan of the forge, brawny in face and arms, and with sinews of iron, much amazed with wonder at his presence before the high King of Israel.

"Didst thou, humble worker of iron, create within thy grizzled brain, and didst thou shape with thy cunning hands, the tools of Hiram, of Abinadab, of Geber, that they might please me with their handiwork? Didst thou fashion the chisel of steel that chipped the marble pillars of the great palace? And didst thou forge from flaming iron those tools so cunningly devised, that the worker might carve the cedar of Lebanon?"

"Yea, verily, most gracious King, hath I done all this, but all for praise of thee, and of thy Temple."

"Fear not, I beseech thee, though thou art but an humble Smith. To thee belongs the honor, to thee belongs the praise, and to thee a seat within the temple and upon the throne, for thou hast fashioned by the cunning of thy brain and strength of arm the tools of all those who did build my temple, and I will create thee greater than all these, for thou art the foundation of all." And thereupon the King declared throughout all Israel *"that iron was king"* and the humble Smith *"the Sovereign of all Artisans."*

Brown-Wales Co.